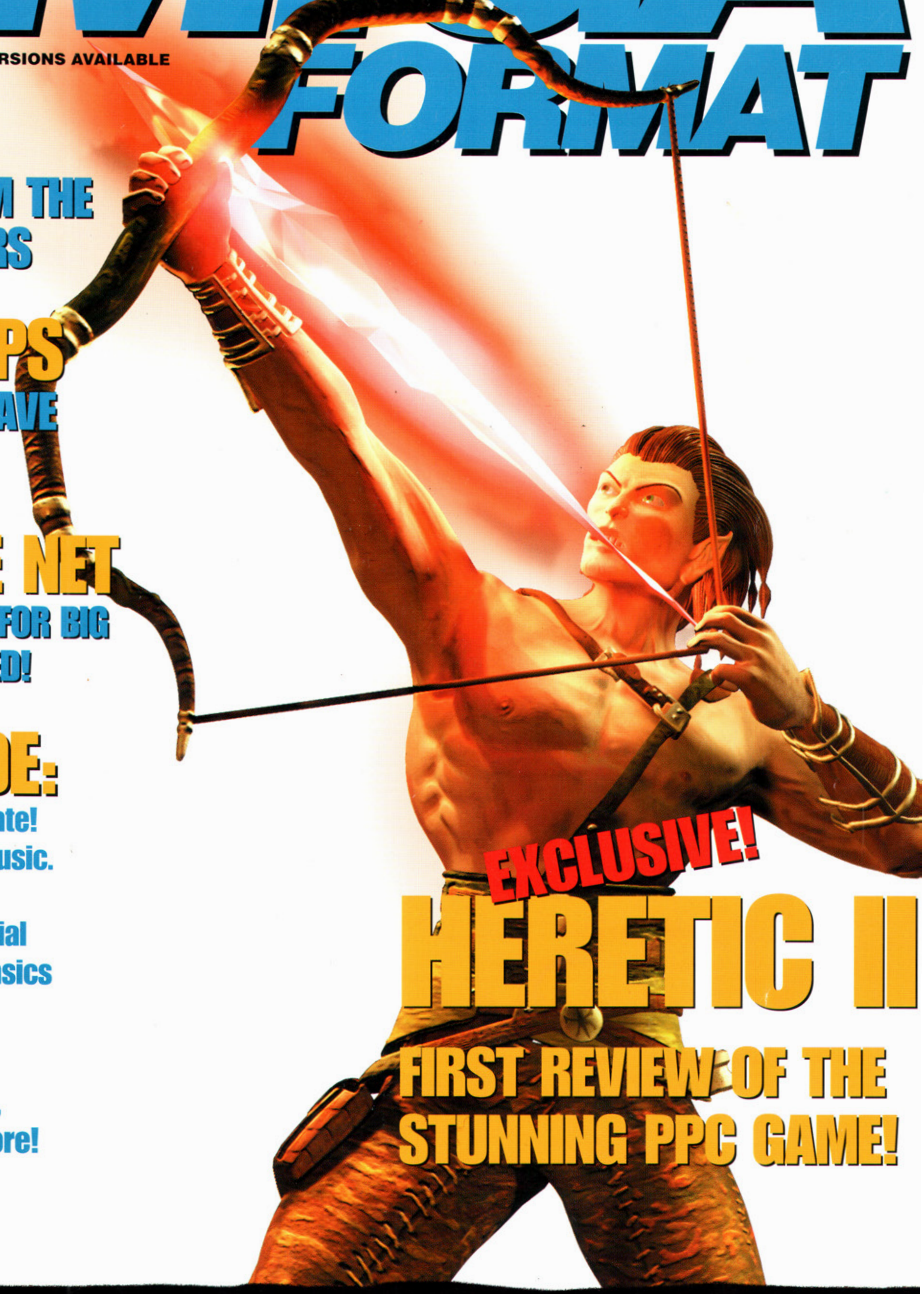
THE WORLD'S BEST-SELLING AMIGA MAGAZINE

AMIGA FORMAT

ISSUE 135 CD AND DD VERSIONS AVAILABLE



TAO TALK
INSIDE INFO FROM THE NEW OS PARTNERS

USERGROUPS
WHY YOU JUST HAVE TO BE A MEMBER

X-SURF THE NET
NEW ETHERNET CARD FOR BIG BOX AMIGAS REVIEWED!

ALSO INSIDE:
Complete emulation update!
Toons – Groovy Amiga music.
Epson 1160 and HP610C
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Beginners guide to 3D basics

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This month's Special Offer Bundles from Eyetech • •

As we carry over 500 Amiga lines in stock at any one time it is impossible to list everything here. If you would like to receive a comprehensive Amiga Products & Accessories Price Index, including our latest specials, please send a large S.A.E (UK:39p), or visit our website at www.eyetech.co.uk/MAIN/AINDEX



NetConnect 3 - £49.95
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SCALA MM400 - £59.95
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OS 3.5 - £34.95
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Siamese 2.5 RTG v2.5 - £69.95
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NETWORKING MADE EASY

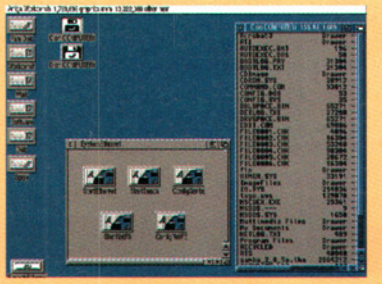
Networking Amigas to each other and PC's has always been possible - but never been easy for the layman to install - with the exception of the Siamese RTG2.5 package.

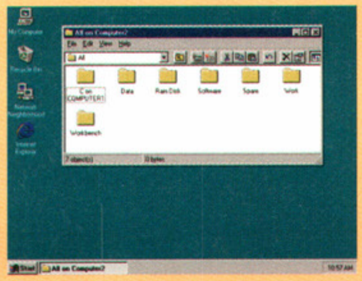
Eyetech has now changed all that.

All our ethernet networking products - from the PCMCIA ethernet card for the Amiga at £44.95 to the top of the range Surf-XS card (see below left) - now come complete with Samba and NET-FS networking software distributions free of charge, and simple installation procedure for working with either Miami or Netconnect/Genesis TCP/IP software (one of which must be preinstalled on each Amiga to be networked).

The exclusive Eyetech installer installs ethernet card device drivers and client/server software suites in just five mouse clicks, allowing you to choose which software package to use after installation by simply clicking on the appropriate icon. Documentation is provided on disk to show how the installation can be fine tuned by just a few more mouse clicks to selectively share drives and volumes. In addition SAMBA supports Amiga to PC networking - including drive and printer sharing. The HTML documentation on CDROM - with step-by-step screen shots - shows how to make the necessary adjustments to Windows network settings.

For those who have already bought the necessary hardware, the software CD is available on its own for just £14.95.



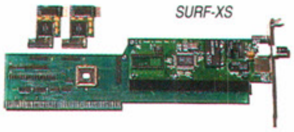


NETWORKING for AMIGAS

Ethernet high-speed networking for professional applications & gaming. All cards come complete with NET-FS software (for Amiga-Amiga networking) and SAMBA (for Amiga/PC networking)

NEW! The SURF-XS multi-functional Zorro ethernet and I/O expansion card

The **Surf-XS** is an all-new high performance card for all Zorro-based Amigas, including the A2000/A3000/A4000s and Amiga 1200s with the Z4 or other expansion boards. As standard the card comes with:



- 10Mbps ethernet adapter, with both BNC and UTP (twisted pair) connectors and SANA II compatible drivers.
- 2 clockports, suitable for adding one or two Silver Surfer or PortPlus/PortJnr high speed serial/parallel cards, a clockport-fitting Catweasel high density floppy controller etc.
- 2 x IDE ports allowing up to 4 additional (non-bootable) hard drives/ CDROMs/ CDWriters (needs IDEFix 2000 - available separately)
- 26-pin extension port for GoldSurfer/Hypercom3ex high-speed, 2 x serial/1 x parallel expansion card.

And the price for all this functionality? - an unbelievable £79.95.

Surf-XS + PC PCI e'net card + 3m UTP cable - £99.95
Surf-XS + PortJunior MK 2 460K bps serial - £99.95
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PortPlus XS 2x460kbd ser + 1x par i/f alone - £49.95

PCMCIA ethernet card (UTP) with Amiga SANA II and PC drivers - £44.95
2 x PCMCIA ethernet cards and drivers with 3m twisted UTP cable - £89.95
1 x PCMCIA ethernet card plus 1 x PC PCI card and 3m UTP cable - £69.95
Envoy Amiga-to-Amiga professional networking software (2-user) - £39.95
Siamese RTG2.5 Amiga-to-PC client/server networking software (needs Amiga TCP/IP stack - included in OS 3.5 software & internet software) - £69.95

All A1200 PCMCIA ethernet cards need the CC_RESET fix carried out to ensure reliable operation - just £20 within 30 days of a PCMCIA ethernet card purchase (normally £30)

SERIAL NETWORKING - for occasional Amiga-Amiga & Amiga-PC file transfer

Null Modem cable 2m alone - £9.95
10m - comes with TwinExpress PD Amiga/ Amiga & Amiga/PC networking software - £19.95
Siamese RTG 2.1 serial Amiga-to-PC client/server networking software - £19.95

PARALLEL PORT NETWORKING - for 2 Amigas
Parallel cable for Parnet/Parbench networking software (which is included) - £19.95

OTHER NEWS THIS MONTH

SPECIAL OS3.5 OFFER

Send us your old 3.0 ROMs* and get a further £5 off the purchase of an OS3.5 & 3.1 ROM Bundle - *OR* - return your old ROMs within 30 days of purchase for a £10 credit# against future orders.

Now you have no excuse not to upgrade!
** ROMs must be in full working order*
credit good for 6 months on purchases over £30

BVISION - The best graphics card available for PPC-equipped Amigas by far. We have specially commissioned DCE to produce a further limited batch of these superb cards under licence from phase 5. This is almost certainly a one-time production run - please ring to secure your card and avoid disappointment.

CYBERVISION 64-3D MK II

The most cost-effective graphics card for Zorro-based Amigas, supporting resolutions up to 1600 x 1280. Double-speed mode available with Z4 expansion boards. MkII versions supplied by us are now fully A2/3/4000 compliant - Just £159.95.

OS 3.5 BUNDLES

OS3.5 on CD (alone) - £34.95 ■■ **OS3.5 & 3.1 ROMs** - £54.95 ■■ **OS3.5 & CDPlus-SE 24-speed external CDROM** (with 4-device buffered interface, PSU, cables & software) - £99.95 ■■ **OS3.5, 3.1 ROMs & CDPlus-SE 24 speed CDROM** - £119.95 ■■ Need 3.1 ROMs? see our 3.0 trade-in offer (above right news column) ■■

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- PortPlus MK2 (2 x high speed serial + 1 x hi-speed parallel) for A1200 clock port - add **£50**
- Hypercom 3i+ (2 x high-speed serial + 1 x hi-speed parallel) for Zorro Amigas - add **£40**
- Hypercom 4i+ (4 x high-speed serial plus 2 x hi-speed parallel) for Zorro Amigas - add **£60**
- STFax-4 Amiga fax & voice mail software - add **£30**

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Apollo Accelerators

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1240/40MHZ (30 MIPS) MMU, FPU	- £149.95
1260/75MHZ LC (59 MIPS) MMU no FPU	- £199.95
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Fujitsu Printer A4x25mm with PSU (NiCad +£10) - £29.95

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The most effective way to back up your Amiga data -
EZReWriter 2xwrite 2xrewrite 16xread bare drive - £139.95
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EZReWriter-Gold external 2x2x16 w/MakeCD 40w PS - £199.95
Above available with faster 4x2x8 mechanism for £20 extra
Special Offer: CD media half price bought with an EZReWriter



Parallel Port Scanner Bundle

- Mustek 600 CP A4 Flatbed Scanner for EPP parallel port
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- ScanQuix award-winning Amiga software, PC & MAC scanner software
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No other interfaces needed - just £149.95

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DELTA SWITCH ELECTRON SOLO VISA MasterCard



AMIGA FORMAT Contents

Issue 135
April 2000







KEY: Regulars · Games · Serious · Creative · Readers' Stuff





SCREEN PLAY



REGULARS

SERIOUS

CREATIVE

AF'S REVIEW POLICY

...is very simple. ***Amiga Format*** is written by the most experienced Amiga users in the world and what we say goes. OK?

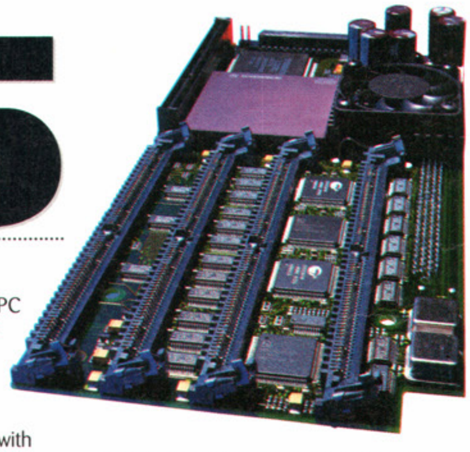
WHAT OUR REVIEW SCORES MEAN

90+%	These products are absolutely top notch. They are hard to find any fault with and that's the reason they get an ***AF Gold*** award.
80-89%	These are excellent products that could be improved ever so slightly. They are well worth your cash.
70-79%	A very good product with a few flaws. Items that get a score in this range are still good, but need work.
60-69%	Above average products which need improvement to get a better score.
50-59%	Average products get average scores.
40-49%	Below average and needs a fair bit of work to make it worthwhile.
30-39%	Needs a lot of work for a good score.
20-29%	Something fatally wrong.
Under 20%	The absolute pits.

AMIGA WORLD NEWS

Send any news stories to us at amformat@futurenet.co.uk or to our postal address (see page 81) with the subject 'news'.

Sad day for phase 5



On the 26th January this year, phase 5 officially applied for insolvency with their local court. Their mail servers had been down since the middle of January and other developers around the world who relied on phase 5 for their hardware were very tight-lipped about the situation.

All Amiga owners who made a pre-order or order with phase 5 for a new G4 accelerator or replacement parts for their existing CyberStorm PPC and Blizzard PPC cards will receive a statement about their rights from phase 5, once the insolvency proceedings are underway and it can be ascertained exactly what and how much is owed to whom. But it's not all bad news. German hardware developer DCE have made sure

Rumours have also reached us of DCE designing an uprated and updated version of the CVisionPPC card based on the Permedia 3 graphics chipset

that they retain the rights to manufacture the set of designs they licensed from phase 5 last year, and the first products should appear shortly. The initial run will consist of CyberVision 64/3D graphics cards specifically adapted for DCE's Z4 busboard, which provides a Zorro II-style bus at double speed. These will be swiftly followed by a run of the long-awaited PowerPC-related cards. The BVisionPPC and CVisionPPC graphics cards, the CyberStorm PPC (604e-based) and CyberStorm Mk III 040 and 060 accelerators, and a much smaller range of Blizzard PPC accelerators (only 233MHz versions with SCSI) should be available in the UK from dealers by the end of March.

Rumours have also reached us of DCE designing an uprated and updated version of the CVisionPPC card based around the more advanced Permedia 3 graphics chipset, which is capable of 32-bit graphics at 1920x1200 resolutions and which gives much better 3D performance than its predecessor. While phase 5 could not be reached for comment, English dealer and developer, Tony Ianiri of Power Computing, a company long associated with DCE, was very pleased. "It's bad news about phase 5 but very good news that the UK users who've been waiting for as long as a year for PowerPC products will soon be able to get them," he commented.



Maciek Binek of Elbox, Thomas Dellert of DCE and Tony Ianiri from Power Computing discuss matters.



Month in view...

Much in common with famed American gonzo journalist and author P.J. O'Rourke, I'd almost rather do anything than write for a living, except maybe living in Bosnia or getting a fatal and unsightly disease. However, it is what I do for a living, so putting it off has become something of a fine art that it's easy to take too far. In waiting for juicy news stories, review products and features too long, while it's easy to avoid having to actually put fingertip to keyboard, it makes for a very hectic time towards the end of a magazine's schedule.

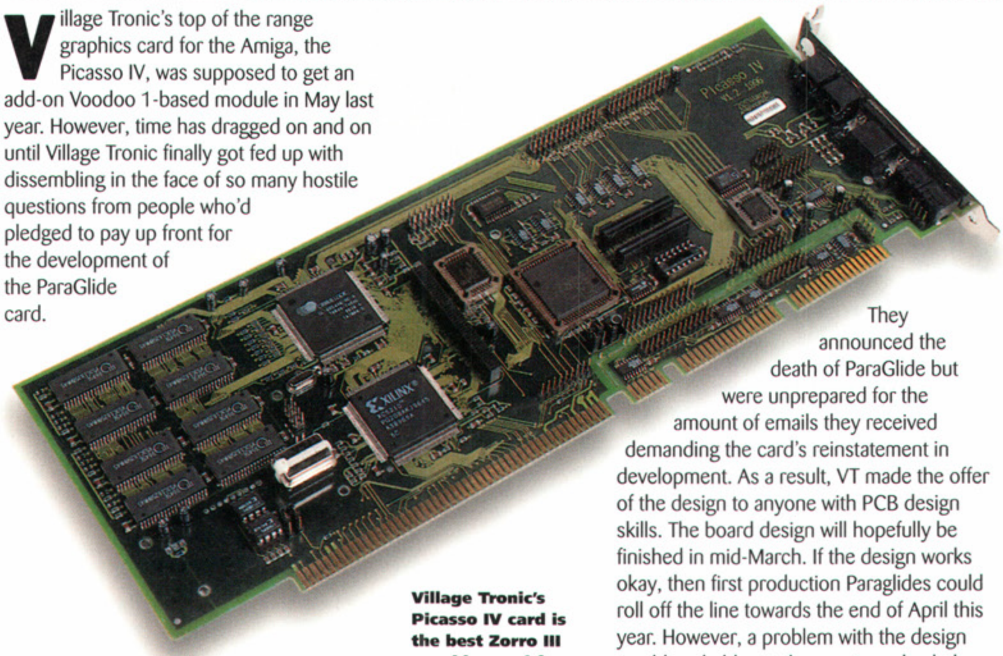
It would be really nice to be able to be smug in the comfort that it was a good job we delayed – that way we didn't miss a story or review, but the only news right now in the Amiga market seems to be bad. The number of people ringing or emailing me to complain about some dealer or other's service; phase 5's long-anticipated death throes, or the presumed typo in Bill McEwen's mail to quite a few people that said he would be 'hors de contacte' until the 21st August...

Even so, there's plenty of good news circulating too, it's just that folk would rather grumble about matters right now. Who can blame them? For the last six years we've hung on for life while our friends, families and even people who are complete strangers to us have gone and bought PCs. It's not fair. Well, perhaps it's now time we get our own back. There has been an increase in the rumblings of dissatisfaction at the prevalence of 3D games where 2D would be better, the cost of video editing and titling, and even the cost of being online are all being brought up as evidence of the pricey nature of the PC. There's hope for us with our ten year old technology yet...

Ben Vost

3D for Picasso?

Village Tronic's top of the range graphics card for the Amiga, the Picasso IV, was supposed to get an add-on Voodoo 1-based module in May last year. However, time has dragged on and on until Village Tronic finally got fed up with dissembling in the face of so many hostile questions from people who'd pledged to pay up front for the development of the ParaGlide card.



Village Tronic's Picasso IV card is the best Zorro III graphics card for the Amiga.

They announced the death of ParaGlide but were unprepared for the amount of emails they received demanding the card's reinstatement in development. As a result, VT made the offer of the design to anyone with PCB design skills. The board design will hopefully be finished in mid-March. If the design works okay, then first production Paraglides could roll off the line towards the end of April this year. However, a problem with the design would probably set the new team back three or four weeks.

WORLD'S FIRST FOR AMIGA!

Amiga owners will be able to rejoice as they lead the pack in technical innovation once more, thanks to a new processor board to be built by Japanese developers gomi. This new card is supposed to shield Amigas from the various extraneous magnetic, radio and other non-visible spectrum signals that flood our lives, and help keep the machine free from crashes caused by neighbours using cordless phone technology. Best of all, the new gomi board promises to shield people's machines from prying electronic eyes trying to spy on key presses and monitor events, so if you have a penchant for illegal activities, or are subject to government harassment, it sounds like an ideal add-on for your machine. This board is unusual because it relies for its power on an unrevealed new type of metallic construct which can only be found near the earth's core. So far, the only evidence of such a compound has been found in volcanoes which is why gomi – a company based in Japan, one of the so-called "ring of fire" countries around the Pacific Rim – has the edge over companies based in volcano-less Europe. While it's no great secret that many Japanese have a fondness for the Amiga, it may come as a surprise to learn that there are several user groups based in the land of the Rising Sun – and even a magazine.

gomi are long-time Amiga owners. CEO Umai Baka had this to say: "I ordered my first A1000 back in 1985, but it didn't arrive until July the following year! All my friends at university in Osaka came to wonder at its marvels, but now they all have PCs. I wanted to use this opportunity to push the Amiga back into the limelight as the first truly secure computer on the market". The reason that gomi have access to this hitherto-unheard of compound is that, for the main part of their work, they are contracted to the Japanese government, who are now more concerned than ever with overcrowding on Japan's four main islands. Japanese prime minister Keizo Obuchi has been heading up taskforces trying to find a solution to the amount of electronic "noise" there now is over Japan, disrupting aircraft and spacecraft launches.

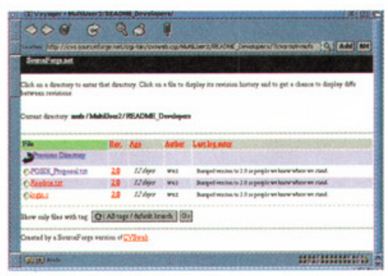
Further info can be found at: http://www.gomi.jp and http://www.yomiuri.co.jp/index-e.htm

Multi-User2 goes open source

Development of *MultiUser2*, the UNIX style security layer for AmigaOS has moved to open source and is being hosted at http://sourceforge.net/.

SourceForge provides a free hosting service for open source developers and offers such things as a CVS repository, mailing lists, bug tracking, message forums, website hosting and much more.

MultiUser2 will offer improved POSIX compatibility over previous releases and is being made more modular. The heart of the system is a new security.library, but backwards compatibility will be supplied via a emulation layer. Also planned is a port of the Linux ext2 filesystem and support of plug-ins such as PAM (Pluggable Authentication Modules). Ideas for future enhancements include the support of Thomas Richer's mmu.library to provide memory protection. The MultiUser2 project is led by Wez Furlong and Richard Smith, who took over maintaining the project from the original author Geert Uytterhoeven.



Source Forge is the new home for MUFS.

Continued overleaf ➡

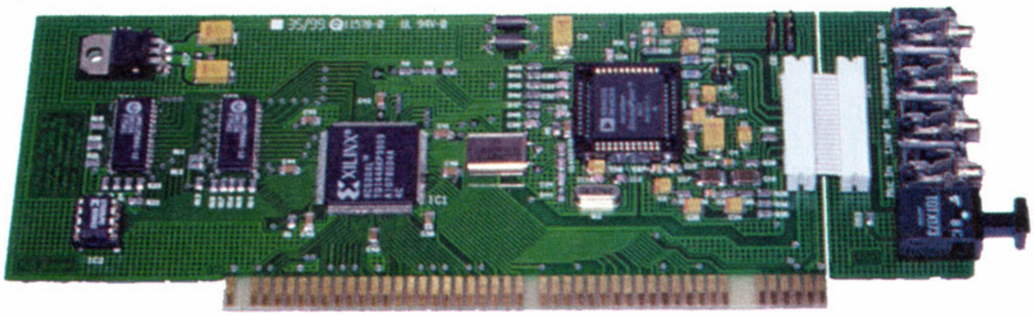
Repulse Soundcard

AlienDesign, the team behind the Scalos Workbench replacement, has unveiled Repulse, a Zorro 2 soundcard. The prototype has stereo inputs and outputs via phono sockets, and an optical digital output similar to that on up-market CD players or Macrosystems Maestro Pro.

Sadly, Repulse has no corresponding digital input, which could otherwise make digitisation easier and more accurate.

The audio conversion is handled by an all-in-one chip from Analogue Devices, with a Xilinx FPGA implementing the Zorro interface. Large on-board memories should make it tolerant of systems that block interrupts for longer than the Amiga guidelines recommend.

The fly in the ointment is that, so far, they have only made a prototype, and they are calling for pre-orders before they commit to full production. While their caution is understandable, it might not augur well, given the problems phase 5, Village Tronic and Microcode Solutions have got into. Their web site explains: "The actual cost of the card itself depends on the quantity produced. We need at least 100 pre-orders to start production for a price of approximately 130 Euros". If you might help them make up the numbers, you can contact AlienDesign at: http://www.aliendesign.net/repulse/



Repulse, the prototype Zorro II soundcard with digital output.

AAA awards

Once again, it's time to cast your votes in the AAA Awards! Some changes have been made from last year, so please read on and find out what's new!

The recipients of the 1999 AAA Awards, presented for greatest achievements in 1999, are selected in the following manner: the Community awards, presented for outstanding work for the community, are given to the nominees receiving the most votes in each region. Quite simple.

The Product awards, presented for best Amiga or Amiga related product, are decided on by a jury – based on the nominations from all of you. Also quite simple.

A note on the Product category though: not all regions have this, and that is because our Associates in that country consider the Amiga development to be too small. So, just fill out the form right away (make copies if you want to vote in several categories) and send it in using one of the following methods.

Mail: AAA Awards, c/o Holmgren, Älvkarleövägen 36, SE-814 94 Älvkarleby, Sweden http://www.aaa-awards.org

email: suggest@aaa-awards.org

Phone: +46- [0] 90 – 710020 (24 hrs)

Fax: +46- [0] 8 – 598 302 61.

For more information on where and when the awards will be handed out, please check our homepage and information hotline (+46- [0] 90 – 710020).

The 1999 AAA Awards are presented by the AAA Awards Committee in Partnership with Amiga, Cloanto, *Amiga Format* and Amiga-St. Louis. Our associates are AmigaSoc UK, Amiga Users Club of Spain and Gateway Amiga.

I cast my vote for the AAA Award:

International
- ❑ Community Award
- ❑ Product Award

United Kingdom
- ❑ Community Award

Spain
- ❑ Community Award

U S A
- ❑ Community Award
- ❑ Product Award

Sweden
- ❑ Community Award

We must have your vote in good time before March 26

If you have the possibility, we would be very happy if you choose to vote through our hmepage instead http://www.aaa-awards.org

I nominate: ______________________

Motivation: ______________________

____

AAA Awards

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Marcel Beck: winner of the 1998 AAA international award.

Open Amiga update

The Open Amiga Foundation has announced a strategic relationship with AROS, the Amiga Research OS project. The objectives of both bodies was to produce an open source version of the Amiga operating system – so as Open Amiga's president, Steve Crietzman, has said: "It makes sense for us to work together". Open Amiga is the new name for what was the pressure group known as the Campaign to Open Source AmigaOS.

COSA was set up in response to Gateway's negligent handling of the Amiga with intention of persuading the PC giant to release the source code to AmigaOS. The new title may sound more workmanlike and more fitting to their new role, but perhaps more care should have been taken since it gives rise to the initialism 'OAF'.

The terms of the deal see the OAF become in charge of public relations, marketing, business and legal affairs of the AROS project. This will give the AROS team more time to concentrate on development. The OAF will also handle general promotion of open standards, open platforms and open-source software within the Amiga community. They also intend to step into the long-vacant shoes of CATS and address the lack of developer support.

A press release from the OAF said: "It is our mutual goal to chart a future for the Amiga operating system this is ambitious, radical and far-reaching, and gives the AmigaOS a chance of real survival and growth, as an independent OS preserving its own unique identity".

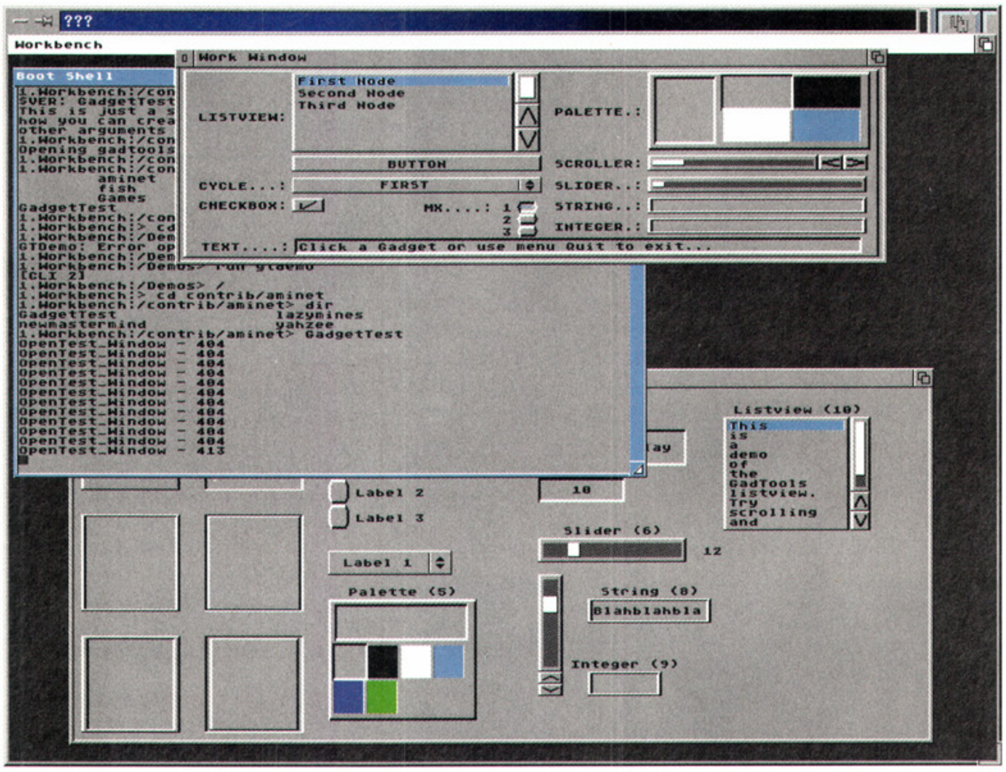
The OAF will continue to press Amiga, Inc. to open-source AmigaOS. The management at Amiga, Inc are said to be unofficially in favour of such of move, but the matter is complicated by many legal hurdles such as the fact that key parts of the OS are protected by patents that are retained by Gateway.

Meanwhile some reorganisation has been taking place. Contributions have been taken out from the main source tree, reducing its size considerably. Don't worry, though, the sourcecode hasn't shrunk.

A website has now been set up for the AmigaOS PPC version of AROS (see http://free.polbox.pl/a/arosppc/

The PowerOS team have donated their own PPC version of Exec to the project and are now looking for a developer experienced in PPC assembly language help them port it to AROS. For more information on the Open Amiga Foundation go to http://www.openamiga.org/. A new website should be live by the time your read this. The home pages of the AROS project can be found at http://www.aros.org/

AROS running under Linux.



Continued overleaf ➡

100 issues ago

AF35 June 1992

AMIGA FORMAT



We look at what was going on in the Amiga market 100 issues of *AF* ago...

■ Cover Feature: Make it easy on yourself. A guide to sampling, digitising and DTP and graphics, with the pitfalls, and plenty of warning about copyright infraction.

■ On the disk: Two floppies with the complete version of Spectracolor Jr and a demo of Easy AMOS along with a bunch of games.

■ News: A bit of a non-story for the lead, talking about a ROM socket on the A600 that could be used for games.

Most developers said that they would wait and see, and it never materialised on the final version of the A600, becoming instead the PCMCIA slot.

There was plenty of other news on new versions of software being released – DOpus 3.41, CanDO 1.6, VLab 1.2 and the first news of GVP's excellent HD8+ gets a 68030 accelerator (and will eventually get renamed to the A530).

■ Prices: The aforementioned HD8+ would set you back £699 with a 52M SCSI hard drive.

■ Games reviewed included: *Pacific Islands* (Empire) 93%, *Eye of the Beholder 2* (US Gold) 91%, *Space Quest IV* (Sierra) 48%, *Addams Family* (Ocean) 78%, *Castles* (EA) 72%, *Project X* (Team 17) 75% and *Apidya* (Blue Byte) 90%

■ Serious products reviewed included: *Dr T's X-oR* (Dr T's) 72%, VLab 1.0 (MacroSystem) 88% (v1.2 was released before the mag went to press), *Expert Draw* (Genisoft) 86%, *Imagine 2* (Impulse) 93%, *TV Paint 1.6* (TecSoft) 89% and *VistaPro 2* (VRLI) 92%

Notes: As you can see from the range of serious products listed here, *Amiga Format* is getting into the golden age for serious hard and software. Even so, the games keep coming!

Euro news

UK developers Activ Logik have announced Storm MP3, an add-on MPEG audio decoder which fits the Amiga parallel port. It's aimed at those with 030s or lesser processors who lack the power to play MPEG files without hardware assistance, and should run on anything from an A500 upwards.

Storm provides stereo jacks for audio output and a pass-through for Amiga audio. It is independently powered by an internal PP3 battery or add-on mains supply. The software includes a low-level library, programming information, an MP3 player and diagnostics. Storm MP3 is in pre-production now, and rivals MPEGit, ACT's £100 Prelude add-on, and Individual Computers' still-unreleased Atlantis decoder for the Amiga disk port. A price has yet to be announced. Contact: http://www.alogik.co.uk/storm.html

In addition, French 68K specialists Centek have announced Phenix, a twin-68060 motherboard which could put Motorola processors back in the forefront of desktop computing. The main processors are said to be clocked at 80MHz, alongside a 100MHz Motorola DSP, 20 bit stereo audio I/O, three PCI slots, two SIMM sockets, USB ports, Ultra SCSI and twin ultra-DMA EIDE sockets.

The asking price for all this is just 1509 Euros, with 32M main RAM, 4M Virge 3D graphics, DVD, LS120 and 6.4G hard drive, in a mini-ATX tower case. The cheapest configuration costs 745 Euros for a motherboard with a single 68060 fitted.

The current model offers Linux 68K, its own OS and support for Atari TOS emulation, but the 1M flash ROM on-board could easily contain AmigaOS and custom hardware drivers.

An open-source AmigaOS would probably be needed to bind the system tightly to the new hardware.

If Mick Tinker's PCI implementation of the Amiga chip set arrives, Phenix could make an awesome new Amiga, and a Draco-like system could be made for applications where Amiga hardware compatibility is not required. Details can be obtained from: http://62.8.16.149/centek/phenix/

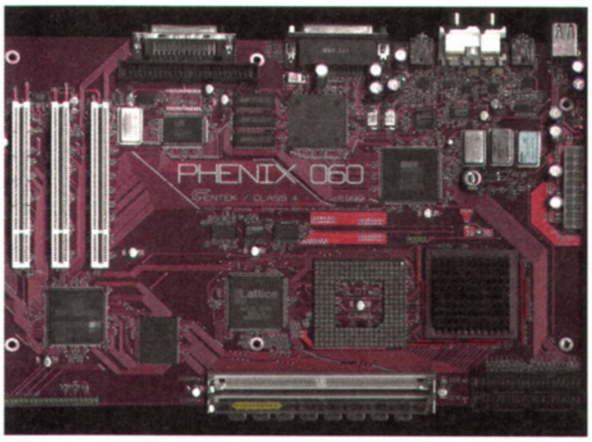


Let's hope Storm's MPEG decoding is less fuzzy than their web photos!

Centek have announced Phenix, a twin-68060 motherboard which could put Motorola processors back in the forefront of desktop computing



MP3 for the masses could got down a Storm if Activ Logik have their way.



Could this French Phenix be the future of 68K computing?

Product News...

FreeCiv 1.8 – Bug fixes and now corresponds to FreeCiv 1.10.0

SimpleFind3 1.2 – New search options and bug fixes

Scalos 1.2b – Changed to freeware under new management

TUP v1.7 – Updated documentation and now freeware

STRICQ – ICQ clone. Now open sourced and up to v0.1727

Lame beta v3.63 – MP3 encoder. Speedups on 68k and bugfixes

Frodo rev 1 – First release of the C64 emulator for WarpOS by Christian Bauer

Warp 3D 3 – Mostly internal new functions and MiniGL support

Aminet CD35 – Has a special version of Digital Almanac II on it

FastATA1200 up to v5.2 – EIDE 99 up to v3.0 - FastATA4000 up to v2.0

CyberGFX 4.2 pre 4 – Bug fixes (especially for OS3.5 and support for Pixel64

Product News...

Squirrel changes hands

HiSOFT have sold the rights to manufacture the Classic Squirrel, Surf Squirrel and Whippet cards to Analogic computers. Analogic will take over the marketing, sales and support of this range of PCMCIA SCSI and serial cards, but the Squirrel driver software will still be available from HiSOFT's ftp server (ftp://ftp.hisoft.co.uk only without any support from HiSOFT. The Squirrel names are still owned by HiSOFT; Analogic has purchased the right to use the names, manufacture the cards and to sell them worldwide.

Analogic may be found on the web at http://www.analogic.co.uk/ and HiSOFT at http://www.hisoft.co.uk/.



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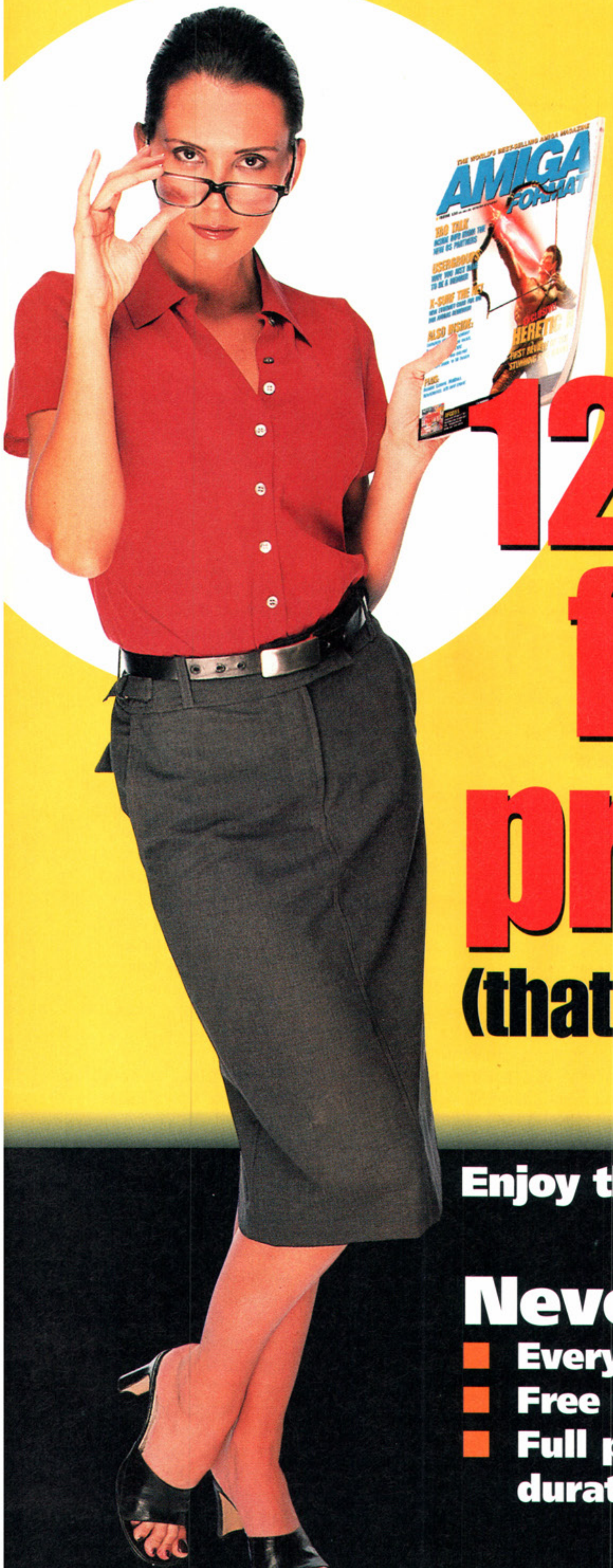
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Tao The Way Forward?

Richard Drummond goes to Reading to meet the men behind Tao, find out who they are, what they do, and what they intend to do with the Amiga

Another lifeline was thrown to the floundering Amiga community at the very close of last year when the company was bought from Gateway by ex-employees Bill McEwen and Fleecy Moss.

Unlike Gateway, the new owners of Amiga Inc do not seem content merely to tread water. Within ten days of the purchase, the news of a partnership with the Tao Group, an "intellectual property generator and software company", was announced; the intention being that Tao will supply the foundation for Amiga's new digital content platform.

The Amiga press release was probably the first time that the majority of the Amiga community had heard of the name Tao. So who are they? What do they do? And, more importantly: what can this latest in a long line of OS partners do for Amiga?

It was questions such as these that were in my mind when I visited the Tao Group's headquarters in Reading, England to see Chairman, Francis Charig, and Director of Technology, Chris Hinsley.

> *Even if you haven't heard of Tao before, you will have heard of many of their clients, such as Motorola, Sony and Victor*

You may be forgiven for not knowing the Tao name, since they do not actually supply systems to end users.

They were incorporated in 1992 and provide a multimedia platform to the manufacturers of digital appliances such as mobile phones, digital TVs, set-top boxes and Internet devices.

However, even if you haven't heard of them before, you will have heard of many of their clients. These include big names such as Motorola, Sony and the Victor Company of Japan. The key technologies which form Tao's platform are the operating system, Elate, and the multimedia environment, intent.

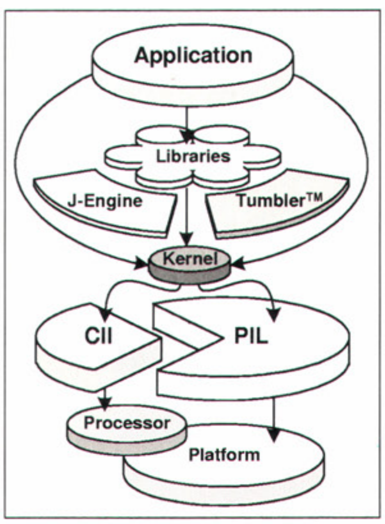


Chris Hinsley waxes lyrical over the intent Audio and Video Environment.

GO ANYWHERE

Elate RTOS is the full name of Tao's realtime networked operating system designed for embedded devices and digital appliances.

It can function either as a standalone system or as a layer over existing systems such as Linux, most Windows variants, QNX and OS-9 (although in this case it's deterministic response is dependent on the host OS), and forms the basis for Tao's other technologies.



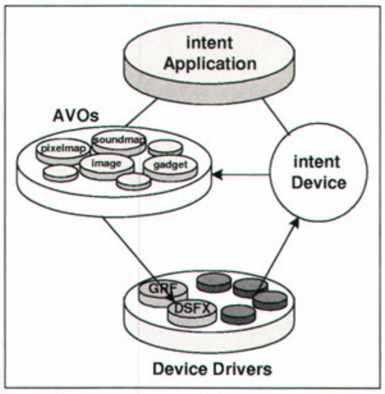
The unique architecture of Elate RTOS.

What is unique about Elate is that it is a truly portable system – both the Elate kernel itself and applications software are binary portable – and it supports heterogeneous multiprocessing. Software written for running on Elate is compiled into VP code, a binary format for a 32-bit, little-endian RISC processor, a virtual processor that only exists in the mind of Tao's technological mastermind, Chris Hinsley. The VP code instructions are mapped onto the instruction set of whatever the host processor happens to be, as the VP program code is loaded, a process carried out by a special translator.

Tao have translators for most current CPU families, including x86, PowerPC, MIPS, ARM, StrongARM and many more. Supporting a new processor is simply a matter of writing a new translator, a task which Tao say requires about one man month of effort.

This approach to portability has many advantages. Since VP code is translated to native code at load time, there is no runtime performance penalty. Programs written in VP code execute as efficiently as programs compiled for native execution on the target processor. VP code doesn't even slow down program loading, since the translation process can occur much more quickly than code can be loaded from a file, whether disk or network based. Loading times may actually be improved since VP-code is denser than binaries for traditional CPUs and so program files are smaller. Also, Elate's dynamic binding techniques mean that only code that needs to be executed is loaded into memory.

The Elate kernel itself is written in VP code and so is fully portable. Even device drivers can be written written or compiled into VP code. The only platform-specific part in an Elate system is the Platform Isolation Layer (PIL). This provides Elate with an interface to resources of the host platform and may include platform-specific device drivers. It is possible to run software written for the target processor via Elate



The intent windowing toolkit manages objects like windows and gadgets.

and, indeed, the programs can be translated into native code at build time.

As, Chris Hinsley pointed out: there are times when this might be desirable. A console manufacture for instance might want to restrict the number of platforms a game can run on to reduce piracy.

Developing software for Elate is no different from developing for any other platform and Tao already have compilers for high-level languages such as C/C++ and Java. What may prove of more interest to Amiga developers, is that you can write your software directly in VP assembly language. This has the benefits of traditional assembly language programming, such as a close correspondence between your program code and the instructions that get executed when a processor actual runs the program. It has fewer disadvantages, too.

Firstly, your code is portable to any hardware supported by Elate. Secondly, programming the VP is simpler than traditional CPUs because because the virtual processor doesn't have the physical constraints that a real processor does. For example, you can assume the VP has an infinite number of registers, since register allocation and spilling occur during translation. Calling a subroutine creates a new context as with high-level languages, so you don't have to worry about saving and loading register contents. This is again taken care of during translation. Tao have a system of macros, which can make programming in VP look a lot like a high-level language. The translator optimises the native code as it generates it just as a conventional compiler or assembler would. Any optimisation which is not too time expensive can occur at load time, including things like path analysis, peephole optimisation and instruction scheduling.

Tao don't just produce generic translators for whole CPU families, though, but rather separate translators for each member of that family. For example, in the PowerPC architecture, they support the 601, 602, 603e, 604e, etc. – each with separate translators.

Elate is a wholly object oriented-system and the kernel can be configured for the intended application. A basic kernel may be as small as 12K; even a kernel with sufficient services to run Tao's Java engine need only be about 300K. Elate's dynamic binding mechanism loads program code on demand and works on a per method basis, thus reducing run-time memory requirements. (To couch this in Amiga terms, if you need the Text ( ) function from the graphics.library, you only need to load code for that function, not the whole library.) In Elate a single method is known as a tool. All of this means that Elate is ideal OS for embedded applications.

For programs written to take advantage of concurrency, Elate's multiprocessing ability can distribute the load on multiple processor systems. It supports both shared memory multiprocessing and distributed

Continued overleaf ➡

SMELL THE COFFEE

Tao's unique Java engine is one of their most exciting technologies, and one that has made them best buddies with Sun Microsystems, the language's maintainer. But what is Java and why is everyone talking about it?

Java is general-purpose, object-oriented language, originally designed for embedded applications. It is related to C/C++, but is much safer. It is strongly-typed and run-time error-checking is performed on Java programs, catching such faults as an out-of-bounds array accesses. Java also supports concurrency and features better dynamic memory management with garbage collection. The Java application environment provides broad range of support libraries with facilities for GUI building, networking and security. Thus Java is a rich and robust environment which greatly reduces the development time of projects.

Java is also portable. Programs written in Java are compiled into an architecturally neutral intermediate form known as Java byte-code rather than instructions for a particular processor. The byte-code is then executed by a Java Virtual Machine (JVM), which translates the byte-code into native instruction during execution. The problem with this is poor run-time performance and has previously been a barrier to the uptake of Java. Some JVM's try to overcome this problem by implementing a JIT (just-in-time) compiler. Here, the complete Java program is translated to the target processor in one go before execution. This causes new difficulties. JIT compiler are large and bulky and typically the code they produce suffers significant bloat factor. The object code generated by a JIT compiler can be many times larger than the byte-code.



Chris and Francis model this year's fashions.
Pink shirt: £17.99
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Belt: model's own.



There's always one shot you don't remember taking.

processing architectures. Thanks to the VP code and the translation technology, CPUs in the parallel network do not even need to be of the same processor type. Hence the term heterogenous multiprocessing.

Tao seem quiet about these unique aspect of their operating system. When asked why, Chris responded: "It was mistake to emphasize parallel processing. It made us seem too radical, too academic."

THE TAO WAY

When we had finished discussing Elate and intent, and they had wowed me with demonstrations, Francis, Chris and I moved to the recreation room in the Tao offices, a place that our photographer had deemed suitable for taking portraits of the two top guns of Tao. This room looked like a sixth-form common room and was dominated by a snooker table. The image was completed by a magazine rack in the far corner with various issues of *T3* and their scantily-clad cover-girls.

I saw guys walking around in bare feet and noticed the way people joked with Francis and Chris as they posed for the shot. The Tao offices have a relaxed, easy-going atmosphere. I looked around. I was sure most of the people here would have looked more at home somewhere in Silicon Valley rather than in an industrial estate in one of the most ugly parts of England. I peered out the window. Was I still in England?

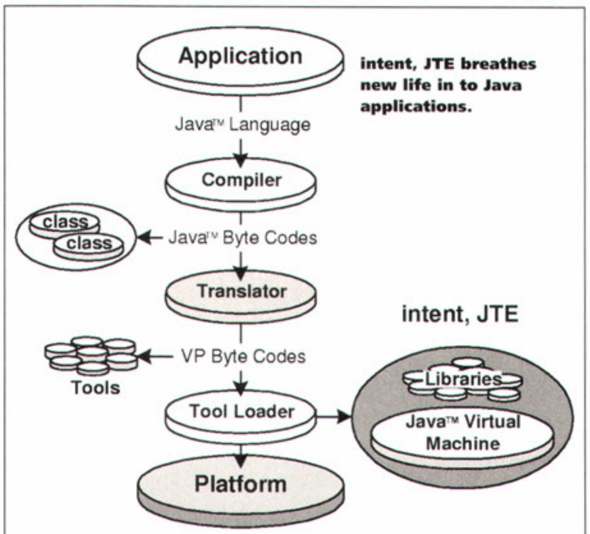
I remembered something Francis said before: "We have the laid back attitude of Palo Alto, with the Japanese drive for perfection". This possibly one of the reasons why Tao have such a low turnover of staff. People who get employed at Tao want to stay working there. According to Francis: "It's because we are doing something that is compelling and innovative". They certainly seem to have attracted a bright bunch of people to the team. "Even the people that write our manuals have first-class degrees from Oxford and Cambridge." Now that is perfectionism...

DIGITAL DREAMS

According to Tao's chairman, Francis Charig, the name intent comes from the terms interactive content, internet and entertainment. intent supplies the tools with which their clients can be build systems to deliver digital content. And, according to Francis, theirs is the only platform which can do this; nobody else is working on anything remotely comparable.

The two pillars of intent are the Audio and Video Environment (AVE) and the Java run-time environment, known as intent JTE. The AVE is designed specifically to allow the high speed presentation of multimedia content. It is hand written in VP code and is thus efficient, portable and has a small footprint. It is made of made up of various toolkits supporting 2D graphics primitives, a windowing system and multichannel audio. Chris and Francis seemed particularly proud of their latest addition to the AVE, an industrial strength, anti-aliased font engine, supporting TrueType and PostScript Type 1 fonts. This was developed in-house because the cost of licensing a third-party engine proved prohibitive for embedded applications.

The AVE also provides a plug-in system whereby clients can add their own functionality to the AVE. A strategic deal signed last year with Criterion has led to the creation of a Renderware 3 plug-in for intent. Renderware is Criterion's multiplatform 3D graphics API, which is famously to be used in Sony's PlayStation2. A recent announcement also revealed a plug-in of SSEYO's Koan audio management library. Koan is a non-streaming audio delivery system, especially designed for low bandwidth networks, which uses generative techniques to dynamically recreate a sample or score.



intent, JTE breathes new life in to Java applications.



Francis asked us not to photograph him. Perhaps we should have listened?

Chris Hinsley explained intent's windowing system in some detail to me. It is a hierarchical object based system, with object meaning the familiar sort of GUI elements such as windows, gadgets, pixelmaps and soundmaps. You can embed objects within any other object, but objects don't have to be attached to a window to appear on screen and they don't have to be rectangular. Objects can have their transparency and tactile characteristic controlled and an alpha channel applied either as a whole object or on a pixel-by-pixel basis. The control of an object's tactile characteristics allows some interesting effects. For example, you can define an area that is not only visually transparent but is also transparent to input events. Clicking this area with mouse will operate an any object lying behind.

The windowing toolkit doesn't enforce a particular look and feel. The screenshots shown on the website are merely an example of a possible GUI system and one that he created himself. He dismissed it, claiming: "I'm no artist". Tao's clients are free to create any type of interface they wish. He fully expects Amiga, Inc. to "Amiga-ise" the windowing system.



The Tao logo, which you will soon come to recognise.

THE BLACK STUFF

The other pillar of intent is the Java environment, intent JTE implements a Java platform which is fully compliant to the PersonalJava standard and the Java engine itself is JCK-tested. The Java engine and run time classes make use of Elate's translation technology to get high performance, a low footprint and modest memory needs.

Tao's Java engine is not a traditional JVM, since no Java byte-code interpretation takes place. (The JVM still takes care of run-time garbage collection and thread management, however.) Individual Java methods are first translated into VP code tools which can then be dynamically bound by the tool loader and mapped into host CPU instructions. The immediate consequence is that you get all the advantages of Java with the added bonus of execution speeds comparable to that of native code. With Java, you usually sacrifice performance for portability, but with intent you get the best of both worlds.

Tao claim that their Java engine is many times faster than competitors' embedded Java solutions, and is usually faster than the the best JIT compilers. The difference is that the entire PersonalJava compliant package, including translator and run-time



Tao's headquarters as seen after a visit to the pub.



Chris Hinsley? Isn't that the bloke what wrote Pyjamarama?

libraries, is contained within a footprint of 2M, whereas JITs typically require 10M or more. JIT compilers also suffer from bloat, but programs translated from Java byte code to native instructions using the intent translator typically undergo a bloat factor of less than two. This make intent JTE suitable for embedded applications, where a JIT compiler would be infeasible.

The Java runtime classes in intent have been rewritten by Tao in VP-code for efficiency and consistency of behaviour on any host processor and host operating system. The intent version of the Java AWT (Abstract Window Toolkit) interfaces directly to intent's AVE's windowing toolkit.

PROOF OF THE PUDDING

All this technology sounds great on paper, but how does it work in practice? This was a question I was dying to see answered when I visited the Tao HQ in Reading. Fortunately for me, Chris Hinsley was only too keen to show off his baby.

The demonstration machine was a 300 MHz PentiumII laptop powered by Linux. Elate was running as a layer on top, with an X window acting as a playing field for intent's magic to work on. Before beginning, Chris stressed that intent doesn't yet support hardware acceleration, that the X window was a dumb frame buffer. Screen updates were done by processor power alone, punting pixels by brute force into the graphics memory. I prepared myself for disappointment.

Chris started launching Java programs: a half dozen or so copies of Tao's take on the classic Boing demo, various programs demonstrating the 2D toolkit's alpha-blending and transparency functions, various testers for the font engine and Chris's example gadget set, and an MPEG animation of a Newtonian pendulum being spooled from disk. Thirty or so windows crammed into one X window, all updating smoothly and responding immediately to mouse clicks. More programs were started and still no visible slow down occurred.

Then Chris ran another two copies of the MPEG animation; the pendula still swang, the Boing balls still bounced. "Try doing that from X. Or even Windows. Windows is not a multimedia platform. They got the architecture wrong." Chris reinforced the statement by launching a few more Boing Balls, this time unrestrained by parent windows. He picked one up with the mouse and threw it off the screen. It duly came back, bouncing in front of one window here, visible through a translucent window there, effectively demonstrating the AVE's compositing ability.

The other thing Chris showed me at Tao was perhaps a more concrete example of the power of intent. It was the first product available to consumers which makes use of Tao's technology, the Motorola P1088 Smart Phone. This is a new generation of mobile phone that provides Internet access as well as the usual voice, fax and SMS services. It is slightly bigger than a normal phone, most of the space being taken up with a touch-sensitive LCD screen which is operated via a stylus. In fact, the P1088 is more PDA than mere phone with calendar, alarm, organiser and note writing software.

> *It was only when I began mulling everything over in my head in preparation for this article that the full implications became clear*

"Everything on here is written in Java except the GSM stack," Chris told me. "Even the hand-writing recognition is a Java applet." This is worth mentioning. You input text to the P1088 by writing each letter alternately into one of two adjacent boxes on the screen. The system knows when you have finished a letter when you start to draw in the other box. The P1088 recognizes proper letters, not the stylized Graffiti like the Palm. It is a whole load faster to use, too.



Chris demonstrates the capabilities of the intent multimedia platform.

Chris said he could not tell me what processor drove the P1088, but let on that it had "single figure MIPs". If that wasn't amazing enough, he made a coup de grace by firing up a *Pole Position*-style racing game on the P1088 and proceeded to try to beat the lap record.

THE WOW FACTOR

I've heard tell of people undergoing a Damascene-like conversion when presented with what intent can do. For me the realisation has been a slower process. When I first heard about Tao and their translation technology six months ago, the hacker in me thought: "Hey, that's neat." When I finally saw intent in action, I was thoroughly impressed. But the penny still hadn't dropped. It was only when I began mulling everything over in my head in preparation for writing this article that the full implications become clear.

Francis Charig is right. They do have the only digital content delivery platform in intent. It's not even that any one of the components is mind-blowing in itself. But put the lot together – the binary portability, the fantastic multimedia toolkits, the lightning Java engine – and you come up with something that is greater than the sum of its parts, a whole that is revolutionary.

Jim Collas used to tell us that we had to look outside of the box. Here is a platform that enables just that. Content is king; the box no longer even matters.

Tao have a system which fulfils the Amiga principles of elegance, simplicity and efficiency and which makes it possible to build devices that are flexible, easy-to-use, and which put the user first. I ask you, what better partner could Amiga have?

Richard Drummond

SIGNPOSTS



The Tao Group have a well designed website at http://www.tao-group.com/. Much information on their Elate RTOS, intent and Java technology is here. Factsheets detailing their major products can be downloaded too, as can two PowerPoint presentations introducing the company and the technology. Information on Criterion can be found at http://www.renderware.com/, while the Koan homepage is http://www.sseyo.com/koan/. To begin finding out about Java is Sun's Java resource go to http://java.sun.com/.

Read up on the Tao technology at their website.







The support of hardware companies will give any user group a boost.



So just why are user groups so important to the Amiga community ? Andrew Elia explains...

The whole truth about *USER* GROUPS

Here at *Amiga Format*, we've talked about user groups for a long time and explained how valuable a resource they are. However, there are times when we get the feeling that our words fall upon deaf ears.

It's a common misconception that user groups are a bit like Alcoholics Anonymous meetings – you squeeze all those who admit to owning an Amiga into a small room and get them to talk about their machine. There's also the view that user groups are a meeting place for technically skilled Amigans to practice various kinds of arcane antics with StartUp-Sequences, DOSDrivers, and Datatypes.

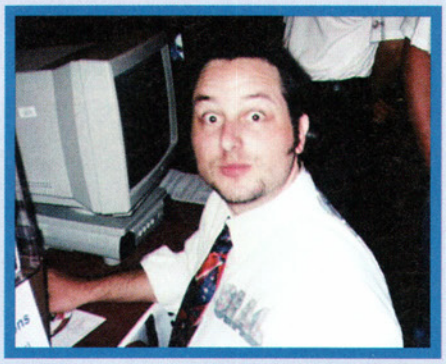
Believe it or not, neither of these portrayals are quite right – though defining what a user group actually represents is a difficult task as there are so many areas that they cover. Apart from the social aspects of meeting up with like-minded people, the primary gain is the education. While many believe that we are disadvantaged by the absence of a high

WORLD OF AMIGA 1999

Although user groups are an essential resource for individuals, they are increasingly becoming a part of the wider community. The most recent example of this is their involvement in World Of Amiga 1999. Although most of what the visitors saw were the user group tables, their involvement was far deeper.

We organised several meetings in London with user groups from all over the UK in order to hammer out some plans for the show and allocate work accordingly. Believe it or not, even groups as far away as Huddersfield and Southampton were willing to make the trip down so that they could pledge the support of their group to this common cause. When you consider the expense of train tickets from some of these areas, the level of dedication these people have is unmatched.

Each user group appears to have a secret weapon which they willingly contribute when occasions like WOA are around the corner. For



Always remember to take regular screen breaks.

AMIGA soc USER GROUPS









Other Amigans are an invaluable source of information and knowledge.

User group are not at all like AA meetings – and not only in that you can get a drink.

street presence, the flip side is that all the disinformation, lies, and ill-informed opinions that are so regularly disseminated by the white goods warriors need not apply to us. Sadly, not everyone knows this.

Let me give you a scenario. A BT engineer came in to our office to fix something that one of his colleagues had broken while trying to fix something else (ad infinitum). He happened to spot a couple of A1200 shells next to my desk that have since been towered up from machines, and he struck up conversation. He had been given an A1200 by a friend of his. His friend had taken the retrograde leap to Windozeland because he'd heard about the Internet.

You know the drill. You've just heard about it, so you go in to Dixons and are told by the spotty teenager that connecting your machine to the Internet isn't possible. "What ? Don't that just do games ? Hyuk, hyuk, hyuk". Sadly, this friend was a little bit on the gullible side and ended up being sold a PC.

***USER* GROUPS**

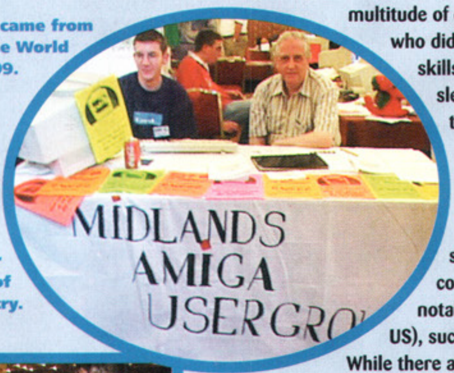
Dismayed by this injustice (and slightly amused by the stupidity of his friend), I explained that the Amiga is probably the purest, most efficient window to the Internet you can find. As it happens, an A4000TE was on hand to demonstrate the point. We had another good chuckle at the expense of his friend, and passed on the details of his nearest user group. We later learned that his friend had already started to develop a dislike for the PC he had so willingly forked out for before and had began to drop various hints at wanting his A1200 back!

If it wasn't for this chance meeting, he might have gone the same way. After all, if you're on your own with no Internet connection, it's very easy to get disheartened when all your mates appear to have deserted to the seemingly greener Windoze land. If we want to stop the community shrinking further, we need to educate the Amiga faithful.

For those of you who believe that ejukashun is a dirty word, let's go back to the social side of user groups. It's one of the reasons why people enjoy Amiga shows so much. Amilon and EAC are a pretty good examples of laid back user groups

Continued overleaf ➡





(left) People came from all over to the World of Amiga 1999.

(right) Many user groups cover wide areas of the country.



SEAL, it's the extremely talented Robert Williams with his superb DTP skills. His efforts were put to good use on preparing the brochures for both exhibitors and visitors (even if some last minute let-downs by the printers meant that most people never actually saw them!). Gary Storm prepared a fantastic video of Amiga artwork, software, and demos, which were sadly eclipsed by Amiga's own offering (which was originally intended to be part of the same effort). The father and son duo of Geoff and Christopher Milnes demonstrated musical applications while the rest of Geoff's group, HAUG, expertly transformed an A1200 in to a tower. Kickstart's Simon Archer (assisted by Neil Bothwick of Wirenet) set up the Cybercafe, even if they couldn't actually get the rest of the network talking to the outside world because of a subtle difference in the way the ISDN had been set up. SWAG's Andy Mills collected a number of Amigas past and present for a mini exhibition of "Amiga through the years", while at the same time assisting Mark Spearing on making a marathon trip from Bristol to Kensington via Pencoed in Wales and Basingstoke to bring a large amount of equipment he went to great pains to borrow from Sony. There were a multitude of others, and even those who didn't have any specific skills all rolled up their sleeves to take part in the more menial roles.

It's definitely a pat on the back for UK user groups as, from our own experience of shows in other countries (with the notable exception of the US), such participation is rare. While there are some user groups present in Cologne, many of the events are organised centrally, and so even IRC conferences require help from outside sources. The ill-fated Infomedia '98 in Antwerp was also a demonstration of what happens when user groups don't make any significant contribution. Waaslandia Amiga Only Club had to practically run the show by themselves when other user groups failed to participate. The comparative size of the UK is bound to have something to do with it.

If this isn't enough evidence that user groups are essential, then give this a little thought next time you visit a UK Amiga show! It should also be a pretty good indicator that there is no competition between user groups. We're all working towards a common goal, and so there's no reason why it shouldn't be a team effort all the way. Be in no doubt, the UK is gifted with many hard-working and enthusiastic groups, and it's up to all of us to give them the support they need.






One of the more "laid back" groups – down the pub, without an Amiga in sight.

➡ that put such gatherings to good effect. They meet in a pub, occasionally drop some Amiga terms in to the conversation, and may even end up learning something (even if it is related to which combinations of alcohol can have severe side-effects on your digestive system). While there's nothing wrong with this at all (indeed, they're responsible for many a good night out), the fuller picture can only really be gleaned from having an Amiga or three present.

Very broadly, most other user groups tend to split their meeting activities into two parts: the first is often a demonstration or talk on a subject or product requested by the masses. Popular product demonstrations of late include OS 3.5 and *Photogenics*. Directory Opus appears to be a firm favourite among a large number of groups, too. The second part is usually the free-for-all. It's a tried and tested formula. Multi-player games such as *Napalm*, *Quake*, and golden oldies like *Lotus Esprit* and *Stunt Car Racer* are put to the test. As far as more recent games (like the first two I mentioned) go, people rarely have more than one Amiga with a reasonable enough specification to do the games justice. The meeting provides a common place to get all these machines together and blast the living daylights out of your fellow members. Incontrovertibly, it's the fastest way to make friends... and enemies!

People often bemoan the lack of shops to go and try out Amiga kit. Chances are there will be at least one member of a user group who would have already made the purchase and would be willing to either explain the pros and cons, or perhaps let you have a go for yourself. For groups based nearby an existing Amiga dealer, it's often possible to get a representative to come along with their shiny kit in tow and demonstrate it themselves.

Finally, when your machine is feeling poorly, or you're unsure how to install new Kickstart ROMs, then there are always a number of people who will have the relevant experience and would be happy to assist. Unlike entrusting your prized machine with an "engineer" from a high street chain, the likelihood of bits of banana being left inside your machine and your questions being answered by primate gibberish are relatively slim.




Don't be afraid to initiate contact with other users.

At the end of the day, there's only so far a magazine can go when it comes to teaching you, solving your Amiga problems, and describing how good a particular product is. To go the rest of the way, you need a user group. If there isn't a group near to you, then you should consider registering with the Lost Souls Database (forms are provided in most issues of *AF* for this purpose). While it sounds like another attempt to sneak an advert in here, don't forget that it's a service developed for you. It costs nothing. If you can't find a user group local to you and are unable to start a new user group for whatever reason, then sign up to Lost Souls. If and when a user group is started nearby, you'll be notified. The more people we have registered in the database (and at the last count there were over a hundred), the more likely a new user group is to succeed because it has a solid member base. You've got nothing to lose!

TAKING THE PLUNGE

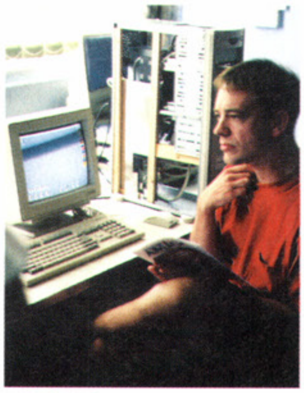
If you think you've got what it takes to start a user group, gather all your patience, all your perseverance, a little creativity and listen up. Your first port of call ought to be the AmigaSoc website. Shameless plugs aside, we keep a database of all user groups throughout the UK. Data permitting, you should be able to ascertain if there are any user groups near to you (within a fifty kilometre radius) by entering your postcode in to the search box. If there is already a user group in an area near you, it's best to get in touch with them as they may well hold meetings close to where you live, even if they appear to be further away in the database (primarily because the postcode locator often uses the average point between the group's contacts and venue).

If you don't find any groups, then mail Chris Livermore (chrisl@uk.amigasoc.org) stating your intentions, and he'll pass on the most suitable candidates from the Lost Souls database. There will be other people within your area in the same position. The Lost Souls will give a reasonable starting point as you'd be surprised how many people will take up on the offer of attending a group, provided it already exists.

Don't be one of the people waiting for it to happen, be one of the people who take responsibility for doing something about it. Make sure that you don't try to be too specific about the catchment area. While the remaining community is quite large, there's not exactly an Amigan in every other house. The name you choose for the group will doubtless reflect the area in some way. In short, try to refrain from setting up "The Chipping Norton Amiga Users Club" (no letters from irate residents, please!) unless you intend to have a total membership of two.

From that point on, advertising is absolutely essential. While advertising in the hallowed pages of *Amiga Format* is a good place to begin, the experience of





If you don't advertise in AF and on AmigaSoc's site, you're missing out.




Getting down to some work.



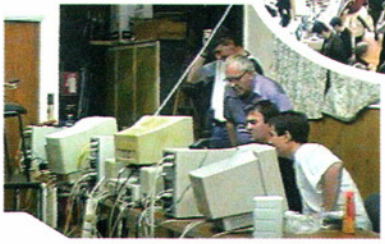


To our knowledge, there are no longer any groups in the UK that are still run for a profit.

USER GROUPS

other user groups would seem to suggest that you need to go a lot further to attract people's attention. The recent (and most welcome) addition of user group presence at the World Of Amiga show appeared to provide an excellent advertising medium. At the time, I made a point of asking as many of the exhibiting groups as possible what sort of responses they were getting. Heart-warmingly enough, people were overjoyed at the response. Curiously though, groups that had been advertising for months on the web were surprised by the fact that some of their newly-registered members didn't even know they existed before then!





Get your contact details to us, so we can add them to our database.





Try to draw up a list of what facilities you can offer potential members for use in your advertising. Traditional offerings include colour scanning and printing, putting animations on to video tape, and more recently, CD burning. While I don't want to get in to a debate about the lack of expenditure on the part of some people (the absence of advertising in this magazine is sufficient proof of that), the real core difficulty is trying to show the punters exactly what they get when they join your group. Most groups nowadays have to charge a small fee for attendance and/or annual membership as venues rarely come free. There are no remaining user groups in the UK (to our knowledge) that still run their groups for profit. Whatever the case may be, you'll have to justify the costs to potential members, and the only way you can offset it is to ensure that they get value for money – and then some.





In our experience, UK user groups have caught on to this very well, especially given the recent trend of providing members with excellent and professional-looking newsletters – well done to SEAL, Kickstart, and PAG! This is one of the reasons why we came up with the User Group Discount Scheme. It's just another incentive to get people to join: appeal directly to peoples' wallets!

The creativity I mentioned before comes in when you advertise, of course. Try as many different means of advertising as possible. Approach local retailers, make sure you've got a website, and make sure you get your group's name and logo visible anywhere you can. Have a go at contacting some Amiga celebrities who might be based locally to you. These are almost always guaranteed to attract a large audience in our experience. A fair number of them will either hang out on AFB or someone who knows them will. More often than not, they'll be happy to come along (especially if they've got a product to plug) and give a talk and/or demo. If you really want to scrape the bottom of the barrel, then Ben and Richard are usually available for the price of a few beers...

Finally, get your contact details to us so that we can put them on our database. The easiest way for people to track down a user group is through our postcode locator, and so it makes sense to ensure that your group is listed. We try to keep our database as up-to-date as possible, but sadly we often have to keep our eyes open to see when details change, as people rarely remember to tell us! If your user group's details change, then please let us know so that we can ensure that those seeking you out will be able to get in touch with you.

All in all, user groups are probably the most valuable resource we have left, so it's in all our interests to support them as much as we possibly can.

Andrew Elia



User groups are the most valuable resource the Amiga community has left.









Get a little help with all your hardware and software problems.

OUR CREDENTIALS

So, what makes us the authority on all this user group stuff ? When Chris Livermore first started QMW AmigaSoc about four years ago, it was an uphill struggle to try and get the members and funding necessary to keep it going. The chicken and egg scenario of needing money to buy equipment to entice members, but needing members to get money seemed like an almost insurmountable goal to achieve. Yet, after much perseverance, we eventually managed to win the funding that the society deserved.

QMW AmigaSoc was raised in a particularly hostile environment in that we were often surrounded by people who seemed to think they knew better – eg: "Why would anyone want to use something that doesn't run Windows?" In order to advertise the group to freshers, we set up a stand at the Freshers' Fayre with a couple of machines displaying various games and demos. We often attracted ridicule from the aforementioned people, but that only made us stronger and more determined to succeed. We don't expect other Amiga groups to be in this sort of position, but the principle is largely the same: don't give up however much the odds may be stacked against you! Consider it an endurance test. Our recent coverage of Amiga North Thames ought to be sufficient evidence that a lot of energy needs to be put in to make a group successful. If you stay focussed, you will succeed.

We've been visiting user groups up and down the country for a long time, and presenting the results of our travels to you. Along the way we've picked up one or two ideas about how things have been done by certain groups, and been advised of some of the pitfalls encountered. Hopefully, some of our advice will prove useful. We're always happy to give advice, so E-Mail either Chris Livermore (chrisl@uk.amigasoc.org) or myself (andrew@uk.amigasoc.org) if you need a hand.

Screen Play

Not since *Napalm* have we seen a game release worthy of the front cover of *Amiga Format*. *Heretic II*, however, more than deserves that honour. The pictures and the review really can't do the game justice. Save your pennies, beg, borrow (but refrain from stealing) to get hold of the necessary hardware to play the game.

You know you want to.

It's worth mentioning that since installing the 3D card Hyperion lent us, I've checked the performance of *Wipeout 2097* and it's now running flawlessly – the problems I reported in the review were, as I expected, due to our setup.

And Epic Marketing have just sent us a copy of the long-awaited *Tales From Heaven*, along with *Seaside* and *Bertie's Animal Kingdom*, all of which will be reviewed next issue.

We'll have to wait and see what else we can feature here in the future but I've got high hopes for *Code name Hellsquad*, which looks to be in the final stages of production.

Paul Cavanagh

SCREENPLAY INDEX

Previews

There's all sorts coming soon – new games, sequels, recently converted titles and some disks chock full of goodies

Digital Dreams News

Code name Hellsquad is nearing completion. In fact, it may well be available by the time you read this. The screenshots here are from the movie-style introduction to the game.



It's all looking rather impressive, and with bonus audio tracks being included on the CD it will probably sound fantastic too.

There still aren't any pictures available for *Wasted Dreams 2*, as the game is still in very early development. I've been told that the team have been in the studio filming for *WD2*, and that there will be a female character (though it's unlikely that the player will be able to control her).

Some levels in WD2 will feature fully rendered 3D environments, while others will be drawn in a similar style to the original, although there will be more colours on screen. One of the strongest elements of *Wasted Dreams* was the plot, and I've been assured that the new storyline is even more gripping, with the female character adding a love interest. Rest assured that you'll see screenshots on these pages as soon as I get them.

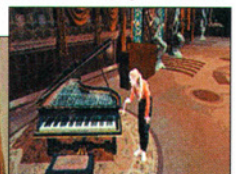
Advance screenshots from the Code name Hellsquad movie intro. Don't ask me what's going on – I don't know.

Phantasmagoria





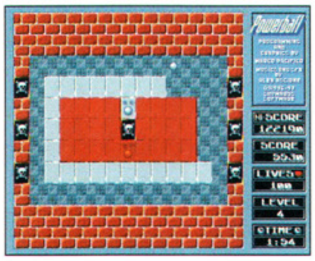
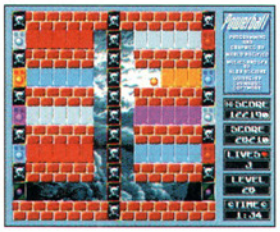
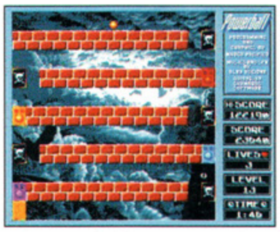
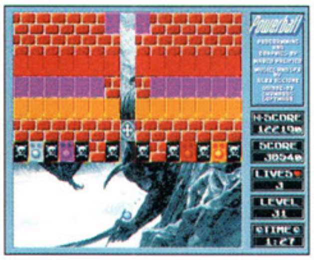

Originally released by Sierra Online way back in 1995, there have been rumours of an Amiga version *Phantasmagoria* for years. Now Alive Mediasoft are proclaiming this seven CD epic to be the biggest game to ever hit the Amiga. That's the sort of claim I would consign to the bin marked hyperbole, but you should be aware that the game does have a large following, and is generally credited as being superbly produced. Combining video footage with computer generated imagery and sound, the game follows Adrienne Delaney around her spooky mansion. Each CD contains one chapter of the story, with the player interacting via a point and click interface. Featuring a full orchestra and choir, a cat called Spazz, and enough gore to get the game banned in Australia, this one looks like it could actually be worth the wait. There are plenty of websites out there covering the game, but do check out http://www.bit.net.au/~larme/archive/phantas/phantas.html for a particularly good one.



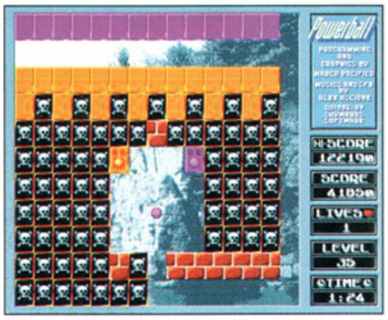
Adrienne gets freaked out while Spazz just chills in the ways cats generally do.

Powerball

Fair enough, it's not exactly stunning or innovative, but Darkage have been busy with Tales from Heaven, and Powerball will be a budget release.

Darkage Software has developed a very simple puzzle game that will shortly be available from Epic Marketing. Roughly speaking, it's a mixture of *Tetris* and *Arkanoid*.



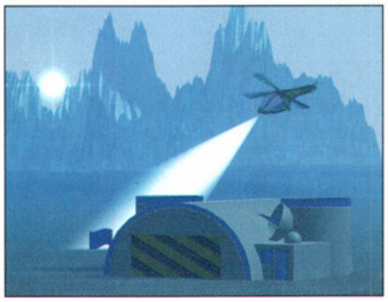
The idea is to destroy all the coloured bricks on the screen by hitting them with a ball of the same colour. You can only move your ball left and right, and the ball changes colour when you hit a special block. There are skull blocks dotted about and if you touch them you are rewarded with a richly textured gown of golden feathers. That was a lie. I'm sure you can work out what really happens if your ball comes into contact with the skulls.

Okay, so none of this is particularly inspiring but Epic will be selling it for less than a tenner.

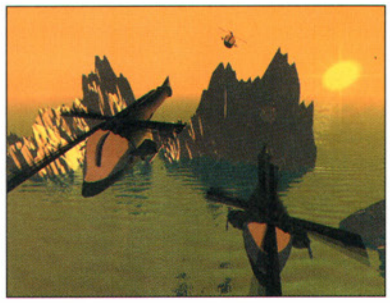
Homeland

Command and Conquer style games come in batches, so expect this one to turn up at roughly the same time as *Exodus* and *Euroburn*. *Homeland* is trying to be clever by allowing you to design your own vehicles, selecting the engine, gun units etc – a good idea that could help to sustain interest. There are only two different races inhabiting the Homeland, and each race will have around twenty missions to complete. You can control up to three other players, one of which can be an ally. To be honest, it doesn't look as smart as the games featured on your left, but you won't be needing a video card or loads of RAM to run it, so for low-end users, this could be your ticket to real-time strategy heaven.

Do you think someone's got an obsession with choppers?

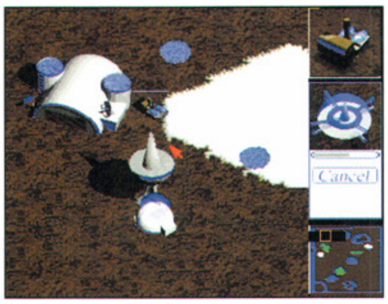


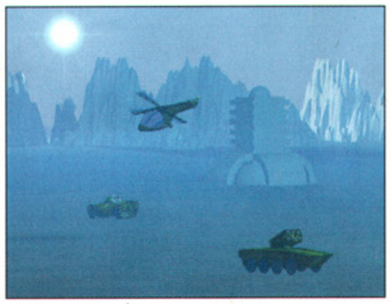
Homeland's hompegape is at: www.dahlsgaards.dk/homeland/



If all goes well, the game should be released by Alive Mediasoft a little later in the year.

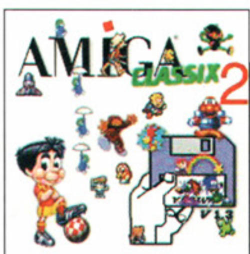
It may not be Napalm, but you'll be able to run it on an unexpanded A1200.





Compilation Corner

Bargain hunters will be pleased to hear that there's more CDs chock-full of games software on the way. Following the success of the original, Darkage and Epic are releasing Amiga Classix 2. They've somehow managed to squeeze over 250 freeware and shareware games on there, as well as 30 full commercial releases. I've not seen a full list of games, but Darkage Software's website (http://www.idealia.net/darkage/) mentions *Scorched Tanks, Diamond Caves, Torch 2081, Ports of Call* and *Antz*. All of the games should run from the CD without installation, and the CD will cost less than £20. Amigagames.com is still being compiled from various websites and, with a hundred titles for a £10, you could really save on downloading costs. If that's not enough, then there's the Best of Airsoft which contains a great deal of utility software. I mention it here because of the inclusion of CD32 Games Install Kit V3.1, which will allow you to install CD32 titles to your hard drive and then run them. This is a new and previously unreleased version, which includes a much more stable emulator.



Soccer Kid, Lemmings and Robocod? That would be nice.



There is a host of other utilities on the CD including hard disk installers, a program that keeps you entertained while your Amiga boots up, several game demos and more. Due for release by Epic soon, full details can be seen at http://www.fortunecity.de/wolkenkratzer/kapital/218/bestof.html.

Paul Cavanagh

Heretic II

If you've got a super souped up Amiga, why not push it to the max with this visually stunning elfin blaster?

Elves are peaceful woodland dwelling folk who sit around singing songs, charming hobbits and discussing the virtues of honey flavoured biscuits, right? Wrong. Well, I guess they might be if they were given a chance, but when there's evil stalking the land, they tend to get a bit gnarly and go round whacking people over the head with big sticks – or at least they do in *Heretic II*. But stuff the plot for now – if you really want to know about that, you can read about it below – the important questions that need answering here have more to do with whether this conversion works properly, if it's any fun and whether it's worth buying. And the answer to all three questions is: "Yes!"

Heretic II is based on the *Quake II* engine, but is considerably different from that game. The most obvious difference is that this is a third-person shooter. Look at the pictures and you'll see what I mean, you've always got this elf standing in front of you. His name is Corvus and he's a bit of a mean feller – he's very versatile and is capable of performing some pretty athletic manoeuvres.

Because the camera is behind your character, you might start thinking it's all rather *Tomb Raider*-ish. It certainly looks that way, but it plays very differently. The emphasis here is on carnage rather than puzzle solving, and you have to aim to hit your foes. The aiming business is a bit tricky at first. When you've been used to *Doom* and *Quake*, it takes a while to get used to having to compensate for the camera's positioning. Don't let it put you off though, you'll be making gory mess all over the place in no time.

As you wander about Silverspring, you'll hear the moans and screams of the citizens and Corvus asks himself what's going on

CONTROLLING CORVUS

Starting the game is a real joy, because you get time to look about you and get used to the control system before things get really nasty. You can control Corvus in a number of different ways – you can use just the keyboard (if you've got five hands) or a combination of joystick and keyboard or mouse and keyboard.

The game supports PSX Port, so you can use a fancy controller too, though you'll be hard pushed to have all the controls covered. I found the easiest thing to do is to have the mouse control where Corvus is looking using the left mouse button to fire, the right making him walk forward, and using the keyboard for everything else.

There's a lot of controls to get used







(Left) Mmmm, pretty ripple effects. (Above Left) Corvus chucks a naff single fireball at a zombie. (Above Right) The spectacular entrance to Silverspring Castle.

THE SICK PLOT

Corvus saved the world from the evil dragon riders and sorted out the chief serpent riding dude. Just before he croaks, serpent feller curses Corvus who is forced roam in the Wilderness for years. He is eventually saved by The Watcher, one of the Books of Power.

He gets home to find everyone afflicted with a plague that causes them to munch on human flesh. So it's time to save the world again. The plot unravels bit by bit, and is shown through these rather pleasing cut scenes.











Sick of all this slaughter, Corvus lightens up a bit and pretends to be Father Christmas. Where are the mince pies?

to, what with jump, duck, look, creep, weapons etc, but it really doesn't take long to memorise where everything is. There's a brief tutorial that explains all the basics very well, and then you enter the game, starting in the docks of Silverspring. As you wander about, you'll hear the moans and screams of the citizens, and Corvus asks himself what on earth is going on. Now and again, you'll hear the pointy-eared one make comments about what's happening around him.

So within five seconds of playing you'll know that the *Heretic II* uses sound to excellent effect to build an atmosphere – when you meet your first bad guys, they make comments about how they'd like to eat your liver – charming.

There are other sound effects. Your footsteps change with different floor surfaces, and all the weapon noises are fantastic. And that's just the sound.







Obviously, you can't hear the sound on these pages, but trust me; it's every bit as good as the graphics.

Visually, the game is outstanding too, with meticulous attention to detail. The docks are full of barrels, coils of rope, flickering lights and mean little dwellings. Later on, there's a castle where you find rich tapestries, crystal chandeliers and ornate vases.



The textures for the walls and floors are sharp and well designed, and some of the lighting effects are spectacular. If I had to criticise, I'd pick out the skies and exterior scenes as being a bit of a let down – the skies look quite lo-res and lacking in colours, and the fogging in the marsh level only looks fine until you notice that objects appear as bright white silhouettes. These are small points, and in a lesser game you wouldn't even pick them out, it's just that I'm looking at them in the context of the rest of the game graphics, which are quite superb.

So what about the action? *Heretic II* plays very well. It boasts a good

FREAKY FIREPOWER

Magical weapons are not to be underestimated, they can be pretty mean. Here's just a few of them.



Staff

A very effective weapon for close quarters combat. Combine run and attack for a spin attack, and with jump for aerial assault.



Single Fireball

A default magical weapon that needs offensive manna. It's not very effective, but useful for long range assaults.



Triple Shot

A very attractive purple colour, this one is much more effective that the single one, but uses more manna.



Chicken and Egg

Use the egg defensive spell to turn your opponents into chickens. From then on, it's easy to turn them into a cloud of feathers.



Thunderbow

Here's a quiver of arrows that generates a storm of fiery rain around the target. Along with lightning bolts, they're very effective...



Book of Power

...Especially when combined with this defensive spell which increases all of your abilites for a while.

Continued overleaf ➡

FANCY FOOTWORK

Having attended junior elf gym classes, Corvus is a nifty little chap. Here's a few of his specialities.



Creeping
It looks a bit camp, but it's handy because if you use this skill, Corvus will never fall off a ledge.



Crouching
Useful for avoiding magical firepower. Can be combined with directional controls for rolling in four directions.



Swimming
Just use the usual controls in water and Corvus will enjoy a refreshing dip. Don't forget to surface for air.



Looking
The easiest way to look around is to use the mouse. This is how Corvus aims his weapons.



Jumping
You can jump straight up, or in a number of different directions. Somersaults are optional.



Climbing
A tap on the space bar near a low wall will cause Corvus to vault up it. Combine with jumping for higher walls.



Polevaulting
Carry the staff, run and jump and hey-presto, Corvus pole-vaults. Can be used to attack as well as get over chasms.



Rope Climbing
Not only can Corvus climb up and down ropes but he can swing on them in any direction and then jump off.

combination of defensive and offensive weapons, and enemies that are worth fighting. So far I've met zombies (two varieties – one armed with fireballs, the other with nasty looking hooks), normal rats, mutant rats, small dinosaurs, strange reptiles, froglike blokes (they shout "Landlubber!" at you), flying reptiles (really tricky to shoot), and some super zombies who lob gas bombs. (They've probably all got proper names but as I haven't seen any documentation, I'm making the names up.) The enemies are varied, and quite vicious, especially when they gang up on you.





Like most games of this ilk, different breeds of bad guys can be persuaded to fight each other, which is fun. There is a violence setting where you can go

I smacked someone over the head in a doorway and noticed afterwards that blood was dripping from the lintel

from seeing nary a drop of blood to watching your foes explode in a cloud of flesh and vaporised guts. At one stage I smacked someone over the head in a doorway, and noticed that afterwards



(Above) Corvus faces up to himself (Left) Check out the variety and quality of the textures. Aren't they simply yummy?

blood was dripping from the lintel. So keep that violence level down if you're sensitive about such things.

SELECT YOUR WEAPON

I had problems identifying weapon names too. Most of the text in the game is in English, but the game options and names of the pickups are in German in the version I've been playing. Don't worry; by the time you read this, a full English version will be available.

Corvus starts with his staff and a single fireball. The staff is actually one of the best weapons in the game for close quarters combat. Combine running with attacking and you can perform a very powerful spinning attack. The staff can also be used to pole vault over gaps, and can be powered up, so sneer not at that pole. The single fireball, on the other hand, is rubbish, and when you use it your offensive mana goes down.

There are two types of weapon, physical and magical. Physical weapons require ammunition – the thunderbow









(Above) Waterfalls are a common feature. (Bottom Left) This is a shrine that will boost Corvus' powers.





requires special arrows, the hellstaff requires special bullets etc. The magical weapons need offensive manna, and look like the different shaped fireballs that Corvus hurls about. There is also defensive mana, which you use to power defensive weapons. These included the Book of Power, which increases all of you weapon power, some meteors which home in and attack any enemies present and an egg spell which turns enemies into chickens. This is really imaginative stuff; it adds variety to a genre stuffed full of shotguns, chainguns and BF guns.

The level design starts off as a simple follow your nose to find the exit affair, but later it develops with more complex levels offering multiple routes and craftily hidden rooms. There are a few puzzle elements, where you have to find keys or objects, but they're not overly taxing.



There's certainly enough to keep you interested here for a good long while, and if the game sells as well as it deserves to, then mission packs will almost certainly become available. Credit is due to a number of teams for the development of *Heretic II*. Id Software created the *Quake II* engine, which provides the basis for fast polygon based blasters that has spawned several successful games. Raven Software adapted the engine to incorporate the imaginative fantasy elements and impressive textures, weapons and level designs. So three cheers all round. Let's not forget Hyperion, though, who have worked long and hard to get this working on the Amiga – a task many would have said was impossible. But they've done it and they've done it very well indeed. What's more, now that they've got the *Quake II* engine running, along with OpenGL (the software format that enables 3D acceleration) there's scope for many more games on the Amiga.

There's a catch with all this though. You need a serious amount of kit to run the game. First off, this is a PPC (through WarpOS) only game. Hyperion did attempt a 68K version but found that, even on an overclocked '060, the game just wouldn't run at a reasonable speed. You'll also need a decent 3D card supported by the latest version of Warp3D. The verge-based Cyber Vision card that we've got in the office was barely up to scratch, so Hyperion kindly lent us a Permidia 2 board, which was nice.

On top of all that you'll be needing at least 64M RAM, and that's barely enough. I have experienced problems with saving and loading games which I suspect is to do with memory consumption. This is something that Hyperion are hoping to address before fully releasing the game.

The other problems are really to be expected with a game of this complexity. There's a tiny amount of skipping on some of the speech in the cut-scenes, and a small frame rate slow down when Corvus encounters an outdoor scene or a large number of enemies at one time.

If you can run this game, buy it. If you can't, you should start thinking about whether you want to upgrade your machine – there are going to be more and more PPC 3D games coming up and believe me, you really do want to be playing them.

Power Computing are hoping to get Cyber Vision II boards in soon, while Eyetech already claim to have them in stock. It's products like *Heretic II* that prove that the Amiga is still a force to be reckoned with. It's up to you to prove to the developers and suppliers that that's what you want.

Paul Cavanagh

SUPPLIER: Hyperion
http://www.hyprtion-software.com/heretic2
PRICE: tba
REQUIREMENTS: PPC and AGA, WarpOS, 3D Grapchics Card, Warp 3D, 64M RAM, AHI Soundcard, 4x CD ROM, 350M Hard Drive space.

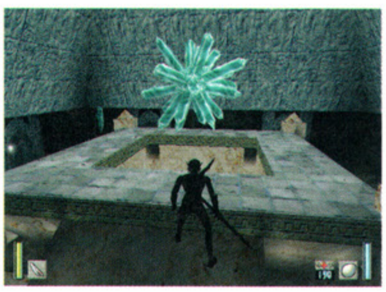
Pros and Cons

- \+ A landmark triumph in Amiga gaming
- \+ Looks and sounds incredible
- \+ Huge, fun and gory
- \- Do you have the hardware to run it?

OVERALL VERDICT: The best reason yet to upgrade your Amiga. Don't miss out on this truly remarkable game.

95%







(Above) This level is full of crumbling ruins. Note the vegetation hanging off the walls and the foliage in the background.

A quartet of home-coded yet distinctly playable games emerges from the postbag

On the CD -ReaderStuff-/-ReaderGames-

Reader Games

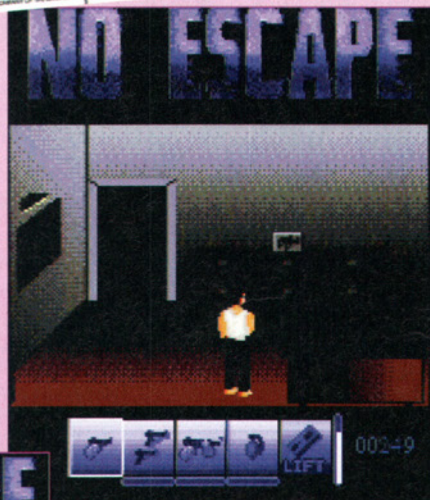
The long dark teatime of the Reader Games soul is over. Many months have passed with next to nothing in the postbag. Then, all of a sudden, there was a renaissance of quality games landing with a contented flump on the *AF* doormat. So stick that CD in the drive and admire the handiwork of our faithful readers. And if you've got any little gems you've been working on recently, send 'em in, eh?



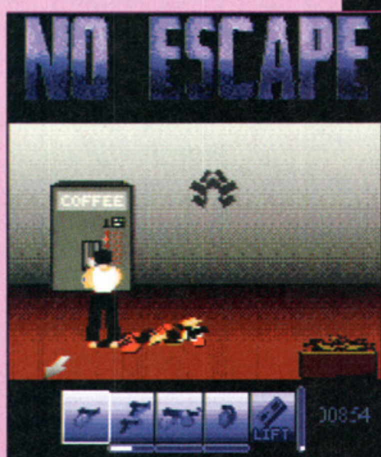
£50 WINNER!

No Escape

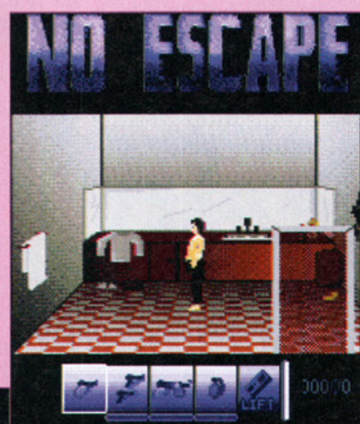
Caught short with without his shoes, our hero bravely pads about a skyscraper dispatching psychotic terrorists and making a bit of a mess as he goes. Obviously a fan of Bruce Willis, Eric Park has done a fantastic job with this tribute. The object of *No Escape* is to find a lift pass, swipe it through a computer and use the lift to get to the next level. You'll soon notice that nearly everything can be shot, and the only way to find goodies is to start denting the furniture. Your job is made harder by the gun toting nasties who prowl about. It is further complicated by the cunningly hidden bombs they've left for you. I really enjoyed the attention to detail in the game; the computer is a neat touch – walk up to one and press the enter key and you'll see what I mean. With four weapons to find and a challenging difficulty level, this is a very competent little game which well deserves the £50 Reader Game prize.



It's a new weapon! Shoot to collect it, then use the number keys from 1 to 4 to select which weapon you want to use.



Some of the coffee machines drop energy enhancing snacks. Yum.





(Above) You have to shoot the door to leave the bathroom.
(Left) The rather neat computer system.

Author: Eric Park
Language: Amos
Verdict: Gloriously gory fun

READER WARRANT

When you're sending in your submissions make sure you also give us:
1. An address where you can be contacted.
2. Details of the language used to create the game.
3. A recent photo of yourself.

The address to send your stuff into is:
READER GAMES • AMIGA FORMAT • 30 MONMOUTH STREET • BATH • BA1 2BW

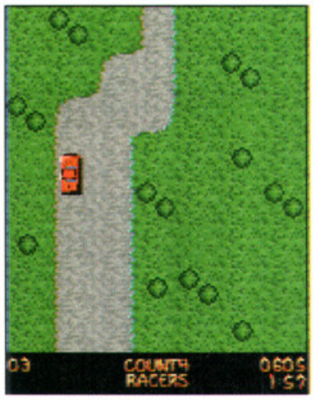
Everything included on the *AFCD* must have a reader warrant with it. Just cut it out of this page or photocopy it, sign it and send it in to us with your game and a photograph of yourself. A last reminder: if you don't include this warrant, we simply won't be able to put your game on the CD – that means you won't be able to have it judged by other readers.

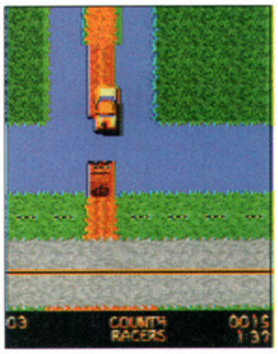
In respect of all material which forms my reader contribution to Future Publishing's *Amiga Format*,
I hereby warrant:-
1. That the material is original and does not infringe any other material or rights;
2. That the material does not contain any material which is defamatory, obscene or indecent and that it is exempt from classification under the Video Recordings Act 1984;
3. That there are no legal claims against the material provided;
4. That I have full power and authority to provide this material to Future Publishing.

Signature: ______________________________

County Racers

Here's another game from this month's £50 winner Eric Park – a *Dukes of Hazard* style racer. All you have to do is keep your car from crashing into obstacles, which is, of course, more difficult than it sounds. The tracks are designed to keep you on your toes, and while there are rarely more than two obstacles on any screen, you still have to perform some nifty manoeuvring to get round them. Using the cursor keys (only the second player in a two player game can use a joystick – doh!) you press up to slow down, and press down to jump up when you get to a ramp. The longer you hold the down key, the longer your car stays in the air, which can be fun. There are ten routes before you reach the roadhouse – there's a great bit on track two where you jump over a police car. I've only got as far as route four so far, and that was pretty tough going. Great stuff, Eric. Keep 'em coming.





Wahey! Leaping over rivers in a taxi. Naughty but nice.



I still haven't got close to beating the highscore.

Author: Eric Park
Language: Amos
Verdict: Simple gameplay, clean presentation, great fun.

T34

Colin Butterworth should be congratulated. Not only for the hard work he's so obviously put into *T34*, but also for his patience with *Amiga Format*; there's been a copy of this game knocking about the office for a long time. First of all I couldn't get it to run, so Colin sent in another copy and then we didn't feature Reader Games for several issues. Sorry Colin. What we've got here (finally) is a turn based strategy game based around the Russian T34 tank. As a lone Russian tank commander stuck behind enemy lines, it's your job to escape from, or destroy, the six German tanks that are out to get you. This is actually a fairly complex game, and you're well advised to click on the icon marked T to view the full instructions within the game. Right-clicking at any time will give you an overview of what all the controls do. Things don't look that complicated – you trundle towards the bridge, hoping to avoid the enemy and occasionally taking pot-shots at them. Well, that's the way I'm looking at it, but then I get destroyed every time I play. So I imagine the best way to play is to carefully position your tank so that you have an optimum chance of hitting the other armoured vehicles. Oh, and keep away from the marsh.



This game even has an animated intro.





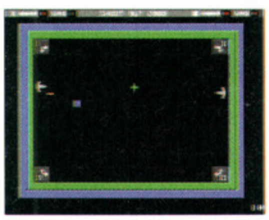
Author: Colin Butterworth
Language: Amos Pro
Verdict: With three skill levels, two maps and six opponents, there's plenty here to keep you going. Good work.

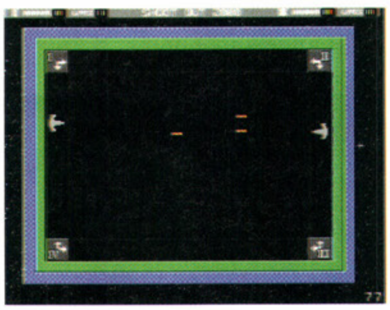
Shoot Out 2000

This is the third version of *Shoot Out* that AFB and Reader Games regular Gareth Griffiths has submitted. In the last inclusion in *AF107*, Andy Smith suggested that Gareth should include a single player game, and that's just what he's done with this version. The one player game is fast and furious, though perhaps a bit too easy. No matter, it's still a very definite improvement. Another addition is that you can now enter different sectors; instead of simply playing up and down one side of the screen, your ship can go all the way around the screen by entering the sector gates at the corners of the screen as you press the fire button. This can be a fun way of infuriating your opponent, especially because you can both be in the same sector at the same time, which makes it impossible to shoot or be shot at. There are also new weapon power ups in this version such as plasma and double shot. It just keeps on getting better Gareth, and shows how your programming skills are developing. We're looking forward to your next project, *Aliens: Homeworld*.



(Below) The green blob is shield sucking plasma bolts. A handy pickup to pick up.





Paul Cavanagh

Author: Gareth Griffiths
Language: Amos Pro
Verdict: A game that improves dramatically with each new version.

SEND US YOUR READER GAMES

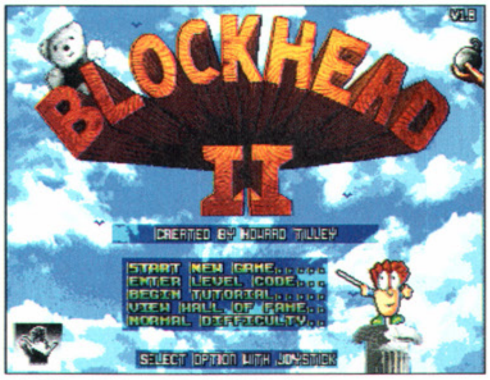
These pages are for you! It's a great place to show other Amiga owners what you're capable of, and if we really like what you send us, we'll send you the lovely sum of £50. Nice! So send your reader games to: Reader Games, Amiga Format, 30 Monmouth Street, Bath BA1 2BW.

GAMEBUSTERS!

Yet more secret codes and cheats to get you through the more difficult parts of your favourite games

Blockhead 2 Complete Level Codes

Blockhead 2 is a real little brain teaser, so here's all the level codes courtesy of Applaud Software's Howard Tilley. Bear in mind that if you jump too far ahead in the game, you won't know what some of the new icons do. The cheat mode is very handy, although you'll still have to worry about Billy the Bear getting blown up when you run out of time.



Blockhead 2 is a right little blighter...



...so cheat to survive those mantraps.

1. POTTERING ABOUT
2. THEY GROW ON TREES
3. AS SHARP AS AN AXE
4. A GIRLS BEST FRIEND
5. BOMB DISPOSAL SQUAD
6. OLD RED EYES BACK
7. A LOT OF BOTTLE
8. MAGICAL GOINGS ON
9. MUSHROOM MADNESS
10. A LITTLE PICK ME UP
11. NO BORDER CROSSINGS
12. MAGICAL AMULETS
13. BEWARE OF THE TRAPS
14. THE DUPLICATING BAG
15. RACE AGAINST TIME
16. TIME ACCELERATION
17. RAY OF SUNSHINE
18. FORCE OF MOVEMENT
19. CRIMINAL BEHAVIOUR
20. MASK OF PROTECTION
21. THE BRONZE GOBLET
22. STAR IN THE MAKING
23. A NICE GREEN DRINK
24. A MOONLIGHT SHADOW
25. THE HARMLESS SKULLS
26. GOD BLESS MY SCROLL
27. THE MAGIC BRACELET
28. ITS COLD UP NORTH
29. DROP IN TEMPERATURE
30. HELMET OF THE GODS
31. IN THE NICK OF TIME
32. TRIAL AND ERROR
33. DO NOT RUSH THINGS
34. THE PHASING BLOCKS
35. A STORM IS BREWING
36. BLESS YOU MY CHILD
37. KARMA CHAMELEON
38. WALLS OF JERICHO
39. POTION PILGRIMAGE
40. ITS ALL IN THE MIND
41. KEEP YOUR HEALTH UP
42. THE INVISIBLE MAZE
43. THE FINAL SHOWDOWN

If you enter ILLUMINATION you'll get infinite health and be immune to the death squares and evil red eyes.

OnEscapee

Sean Musson is stuck on the city level of this action adventure game. Does anybody know what three characters he should enter into the computer and keypad to get any further in the game? If you've cracked the code, write in and let us know.





Bright lights, big city. It's all too much for one reader.

Cybercon III

On the CD -In_the_Mag-/Gamebusters

Poor Mark Rogers. He's been having a really hard time of it with this ancient 3D game. In Issue 133 I promised him there'd be a walkthrough on the CD for him and it never appeared. Sorry Mark, these things happen, check out the CD and see if the solution there can help you out. Your question about retrieving the special device parts and then escaping from the pits they are located in would take up too much space here, mainly because there seems to be a different answer for each component.

Deluxe Galaga & Pacman

This is probably my favourite game on the recently reviewed PD compilation Extralife. You can buy game secrets from the shop if you save enough cash, but why bother when you can read them all here?

1 Catching a skull improve the chances that extra life and cash multiplier bonuses will appear.

2 By shooting the hurry-up ship, you can collect the rank marking that you're missing.

3 When a smart bomb has exploded and the gems are falling, you can collect them all simply by holding down the joystick.

4 If you have a multiply when entering the meteor-storm, you may get a lot of points.

If you get it right, you can shoot the ghosts as soon as they regenerate, boost your score and get all the extra lives

5 Catching a warp icon in an alien stage with a bonus level will give you a perfect score.

6 Red, Green and Blue skulls will give you a very good weapon, full fire power and the best ship speed.

7 When a hurry-up ship has appeared 8 times, a money ship will appear. Shooting this ship can provide you with a lot of money.

8 If you have a weapon type, and catch the same weapon, you will get more fire power.

9 Completing the Meteor storm will give you 100,000 points and 1,000 in cash. And if you ... hmm. He He...

10 You can figure out which skull you have not yet taken by looking at the colour of the meteors in the meteor storm.



Mash those ghosts to pile on the points and gain extra lives.

A thousand credits for a game secret? Are you mad?



11 If you have caught two aliens and the scope is active, you can get a lot of points by the hitting aliens right off the screen.

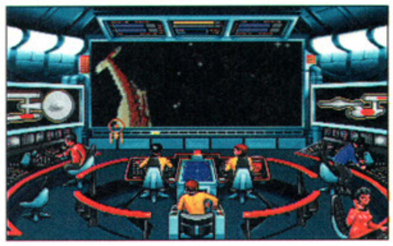
12 If you have the rank of Admiral and you buy more rank markings, you will get 1,000,000.

13 Having a multiply active when completing the game will give you a lot of points.

14 If you have all the rank markings for a new rank, and then buy more rank markings, you will instead buy a new rank.

And here's a rather obvious hint that I discovered myself for *Deluxe Pacman*. If you collect the gun powerup, try to position yourself so that you can fire into the ghosts' den in the centre of the screen. If you get it right you can shoot the ghosts as soon as they regenerate, thereby boosting your score and getting all the extra lives available.

Star Trek 25th Anniversary



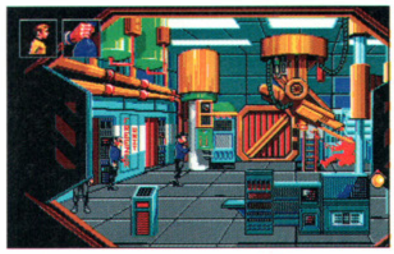
The crew of the Enterprise prepare to test the capacity of their dylithium crystals.

Donald Millican is stuck on mission six of this tricky trekky game. His landing party are wandering about outside a big set of doors, and nothing that he enters into the computer works. Well, according to a solution I found by someone entitled 'Golden One', here's what you should do.

Before you beam down, use the computer to get information on Scythe, Proxima, Lucrs, and Sofs. Use it again and get info on BASE 3. Now beam down to the planet and get the rock. When you get to the door, use Spock on panel and then enter 10200 for the code.

You'll find another door, so use the computer on the left before using Spock on the panel to the door and then enter 122 as the code. I hope that helps.

Paul Cavanagh



We come in peace. Shoot to kill!

SEND US YOUR TIPS & QUERIES!



Have you got hints, cheats, tips or general good advice for any Amiga games? We'd especially like some for the newer ones on the market. Or, if you've got a query about a game, give us a brief explanation of it, where you're stuck, then drop us a line and we might be able to answer it in Helping Hands. Please don't send us SAEs though as we'll just steal the stamps.

Name of Game(s): ....

Point where I'm stuck: ....

....

....

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Send all tips and questions to:

HELPING HANDS • Amiga Format • 30 Monmouth Street • Bath • BA1 2BW

PD Select

On the CD -In_the_Mag-/PD_Select

Yet again we've trawled the Internet to bring you the newest and best freeware and shareware for your Amiga

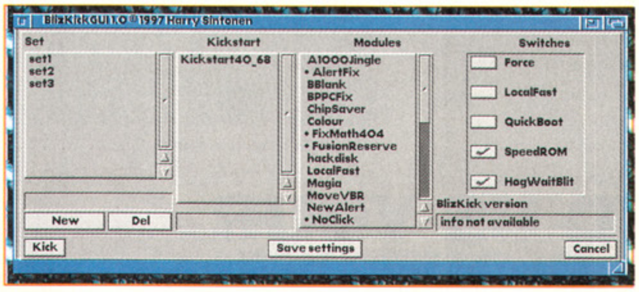
BlizKick v1.22 beta 3

Back in the early days, the fact that a substantial portion of the Amiga's operating system – the part known as Kickstart – resides in ROM was a real benefit. This was at the time when most users had floppy drives only, so storage space and speed of bootup were a factor. Today, however, it is a hindrance. It means that the core of AmigaOS is difficult to update. As an example, several of the updates that AmigaOS3.5 makes require the old ROM-resident modules to be removed, replaced and the system to be rebooted.

It has long been possible to map the ROM image into Fast RAM, either with an MMU or with an accelerator which has a hardware facility to perform this, such as phase5's MapROM function. This speeds up the operating system since read access to RAM is typically four or five times faster than to ROM. On earlier phase5 boards, the MapROM function was enabled via a hardware jumper, but on later models it was enabled via a software tool called *CyberMap*. *CyberMap* can also map in a ROM image from disk and perform certain patches, like the preparation required for running *Fusion* or removing the A4000 scsi.device to permit faster booting on machines which do not use the internal IDE interface. *BlizKick* is an extension of *CyberMap*'s functionality and it too works only with phase5 cards. If you have an Apollo accelerator and are feeling left out, a similar tool is available called *RemApollo* (see util/boot/RemApollo.lha on the Aminet).

BlizKick's core function is to map Kickstart into RAM, either from ROM or from a file. What's interesting about it, though, is that it allows the arbitrary patching of the Kickstart. Twenty-eight patch modules are provided and perform such tasks as the fixing of certain ROM bugs, optimizing the IDE scsi.device for speed, speeding up graphics.library blitting, unloading the ppc.library (for using BlizzardPPC cards with WarpUp) and more. All the source code is provided for these, so, if you're brave enough, you can even write your own patches.

As mentioned above, one of the problems with OS3.5 is that on a cold start, the system is required to be rebooted after the ROM updates have been installed. If you have any other tools that require a warm reset after installation, such as *CyberMap* or an emulator patch, then this really slows down your machine on first power up. *BlizKick* allows all these patches to be combined in one, thus requiring only a single reset. A tool is provided to strip out the modules required for your machine from the OS3.5 ROM update file and these can then be installed using the *BlizKick* command.



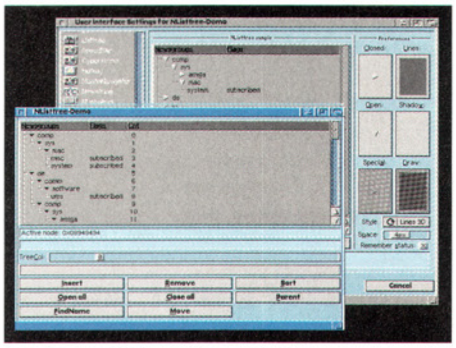
BlizKick is an extension of CyberMap's functionality and only works with phase5 cards.

Installation of *BlizKick* is fairly easy. This is automated via a script and a tool is provided to save out your ROM image as a file. Calling *BlizKick* with the modules you wish to use is more problematic, however. Some patches may be applied directly to the ROM image file via the supplied shell tool, others must be installed via options on the *BlizKick* command line. Typically, this will go somewhere at the very start of your startup sequence. It will take some experimentation to find which modules work with your setup. A GUI is in the works to make setting up *BlizKick* easier, but it doesn't do anything useful yet.

BlizKick is a clever hack – in the best sense of the word. It can give your machine's booting time a real boost and performs various other optimizations. But it's not for the faint-hearted.

BY: Harry "Piru" Sintonen
WARE: Freeware
FROM: http://www.jyu.fi/~sintonen
SIZE: 202K
REQUIRES: A phase5 accelerator with MapROM facility

NListTree



NListTree will become beneficial as soon as applications software begins to make use of it.

With all the weird and wacky custom gadgets that have been created for MUI lately, I always found it odd that nobody produced a better ListTree class. (A ListTree is like a ListView but it manages hierarchical data.) Klaus Melchior's old ListTree was perfectly usable but lacked the features and configurability that one normally expects with MUI custom classes. This has been rectified with the new NListTree class.

NListTree is based on Gilles Masson's NList gadget and so inherits all the great features of that class, such as better drag'n'drop, context-sensitive pop-up menus and the ability to re-order and resize columns of a list. The other added bonus is more control over the visual appearance of the gadget. Several preset sets of images are provided for the nodes and leaves of the tree or the user may select a custom set.

As with all MUI gadgets, this one will only become beneficial when applications software begins to make use of it. However, since this class is functionally similar to the old ListTree class, it shouldn't be difficult for developers to switch over. Also, the author is planning to make an emulation of the old ListTree gadget which will redirect any software using it to the new one. Thus, even old software will be able to benefit from the new features of this gadget.

BY: Carsten Scholling
WARE: Polymorphware
FROM: http://www.aphaso.de/
SIZE: 123K
REQUIRES: MUI3.8, NList.mcc

AWNPipe 2.34

A pipe is a device for connecting the output of one program to the input of another. Very useful, but rather dull, you may think. Well, not any more. The *AWNPipe* device can create the usual unnamed or named pipes familiar from the shell, but it can also parse any data flowing through one of its pipes and hence perform some interesting functions.

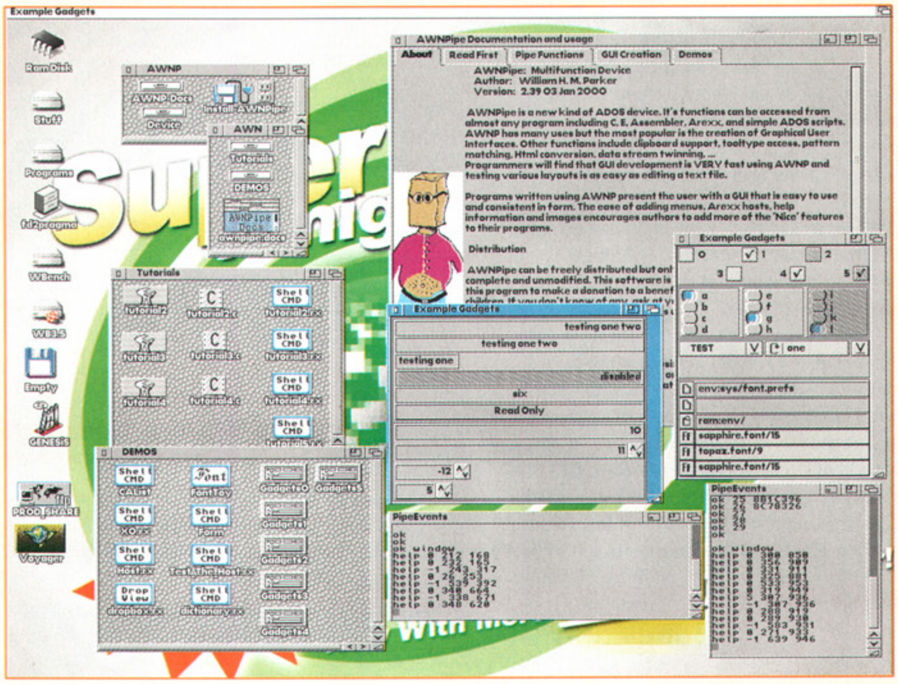
In its basic form, *AWNPipe* creates standard pipes through which data can flow. Useful additions include the ability to connect either end of a pipe to a file or the system clipboard. Piped data may also be parsed. For example, an option is provided to convert special characters to their HTML token and vice-versa. A pipe may also be connected to an icon file to read the tooltypes, etc, of that icon.

The most powerful feature of *AWNPipe*, however, is its ability to construct ClassAct/Reaction GUIs. This is done by creating a file with various keywords and options and sending it down a pipe. *AWNPipe* parses the file and builds the corresponding interface. Error messages and input events flow out of the other end of the device – ingenious. It is very much like the *GUI4Cli* package which performs a similar function with script files, but *AWNPipe*, due to *ClassAct*'s rich set of gadgets, is much more powerful. With this facility, GUIs may be quickly constructed and used from your ARexx or C programs. It is a great way of prototyping or testing the interface for your projects.

Using AWNPipe's GUI-building functions is straightforward, but does require a knowledge of *ClassAct*. Each *ClassAct* act gadget has attributes and methods which be accessed from *AWNPipe* with individual keywords and options.

Remembering all the options is bit of trial. However, the documentation supplied is thorough and loads of tutorials and examples are provided.

AWNPipe is one of those tools (well devices, actually) that is so useful, you wonder why you hadn't thought of it yourself. The chances are, if you are using OS3.5, you are already using the device without knowing it. The tool for configuring OS3.5 menus and keyboards shortcuts, THE uses *AWNPipe*'s facilities.



The principle functionality of AWNPipe is that it creates standard pipes through which data can flow – but it does rather more than this.

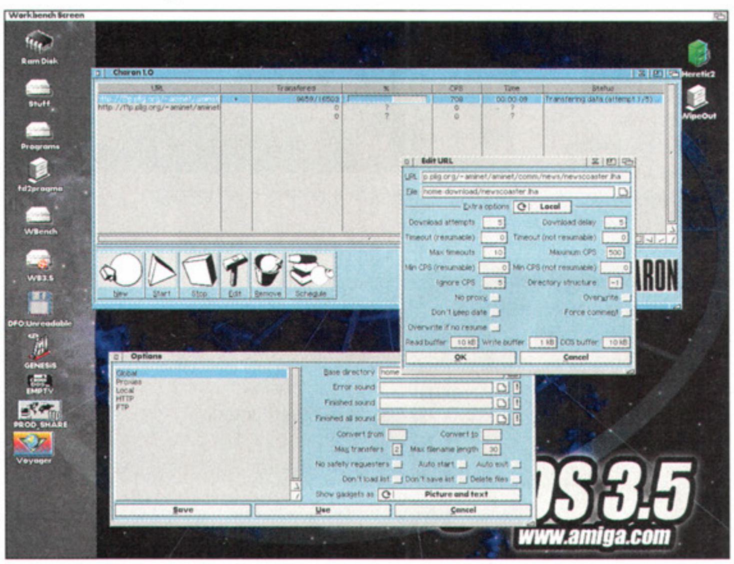
BY: William Parker
WARE: Childware
FROM: http://web.ukonline.co.uk/awnpipe
SIZE: 191K
REQUIRES: ClassAct or OS3.5

Charon v1.0

According to Andrija Antonijevic, the author of *Charon*, one tool that the Amiga lacks is a comprehensive Download manager. So, being the author of successful Internet software, namely *HTTPResume*, he set about creating one himself.

Charon provides of multitude of options and controls for fetching files across the Internet, whether by FTP, HTTP or HTTPS (the last requires either the Miami secure sockets layer, MiamiSSL, or the author's own OpenSSL-based AmiSSL library). It allows the resumption of interrupted downloads from sites which support *HTTPResume*.

The main window of *Charon* consists of a list of URLs, files you wish to download. You can add and remove URLs, start and resume transfers and configure *Charon*'s settings for each URL. Settings include the number of download attempts to make, a delay to wait before downloading, a timeout feature, minimum and maximum transfer speeds, and much more. You can also schedule each download to begin at a certain time.



Charon has been designed as a comprehensive download manager, something which the Amiga, to date, has always lacked.

Charon may import and exports its current list of URLs as a file, so that you can easily pick up the downloading of a set of files between sessions. *Charon* also has a fully-featured ARexx port, by which you or other application software may control its function. An AddURL script is provided which you can launch from the pop-up link menu of your browser (although, Voyager doesn't support the addition of commands to pop-up menus). This means, for example, that when you come across a link to a file you wish to download, you can right click and send the URL straight to *Charon* for downloading. An option to add a URL from the clipboard would be handy, though.

All in all though, this is a powerful program for users who wish to take full control of their downloading, though I suspect many of its features will be rarely used. The category of standalone download manager is an odd one. It can only perform one-way transfers, so is not as versatile as an FTP package. And personally, I feel that Voyager's integrated download manager, which also supports secure transfers and HTTPResume is quite enough for my needs.

Charon is shareware. The unregistered version features an annoying requester on startup, is limited to running one copy of the program at a time, and is restricted to downloading only two files at a time and a maximum transfer speed of 500 cps.

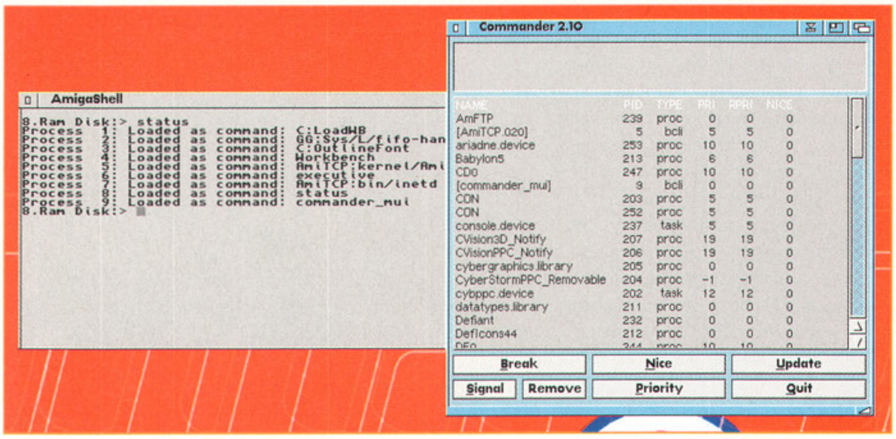
BY: Andrija Antonijevic
WARE: Shareware
FROM: http://www.bigfoot.com/~TheAnthony/Charon
SIZE: 118K
REQUIRES: MUI, NList.mcc

Continued overleaf ➡

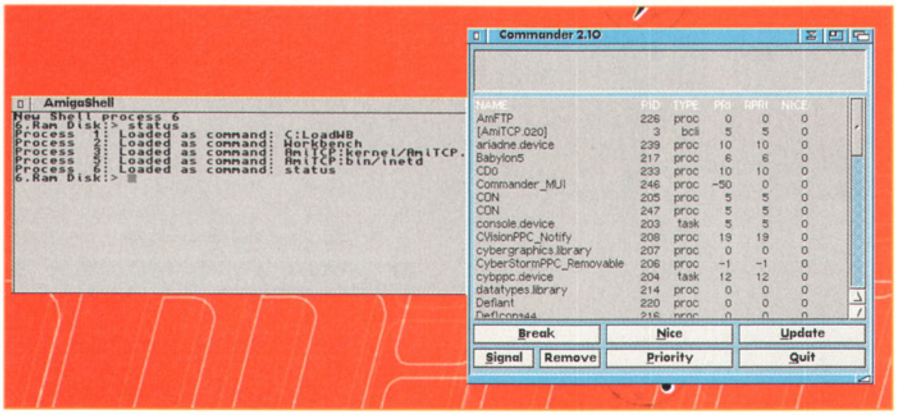
Run44

When you start a program from a shell with the standard Run command, it gets a new shell process attached to it and it shares it input and output streams with the parent shell – that is, in most cases, the same console window. While this behaviour is generally what you want, sometimes you need to run a process in the background. This is usually achieved by redirecting the input and output of the new process to the dummy device NIL: – but that's a rather inelegant solution and doesn't always work that well.

Run44 is a direct replacement for the old Run command and has more facilities for controlling the birth of background tasks. It is 100% backwardly compatible to the old command and, despite its misleading name, works with any version of the operating system since OS3.0. It adds several new switches to the standard Run command template. The option DETACH launches the new process in the background and without a shell process number. This means, for example, that it won't show up in a Status list. The input and output of the new process will still be the parent window unless you also choose to specify the option QUIET as well. The stack size and priority of the new process can be set with the keywords STACK and PRI.



Run44: a neat and well executed idea that should be officially included in the Amiga OS.



Run44 has more facilities for controlling the birth of background tasks.

To install *Run44* as a replacement for the original Run command, you first have to unload the old one (since it is an internal resident command). *Run44* can the be made resident. Ideally, you will perform this early on in your startup, since *Run44* is at its most use here. You can use it tidy up all those messy I/O redirections and make sure that process that you don't care about really do stay in the background. *Run44* is a neat and well executed idea and something similar should be officially included in AmigaOS.

BY: Harry "Piru" Sintonen
WARE: Freeware
FROM: http://www.jyu.fi/~sintonen
SIZE: 11K

CreateOutline

Users of the *NewIcons* package who have since upgraded to OS3.5 might be missing *NewIcon*'s outline font facility, the ability to render labels of Workbench icon in two colours. This allowed you to put an outline or shadow around text to make it more readable on a variety of different desktop backgrounds.

The *NewIcons*'s patch no longer works under OS3.5, but there has been an update to the separate OutlineFont hack which is now OS3.5 compatible (see Aminet at util/wb/outlinefont13.lha). This works by patching the graphics.library function Text () to modify text rendering from the Workbench process. Although this works very well, you may be reticent to install such a hack to an otherwise pristine OS3.5 installation. An alternative is *CreateOutline*.

CreateOutine achieves the same ends as all those various hacks do, but goes about it in an entirely system-legal manner. It is merely a tool which creates colour fonts from normal monochrome fonts – along with the outline or shadow – and stores them in your FONTS: drawer. These can then be used on your desktop to achieve the desired effect.

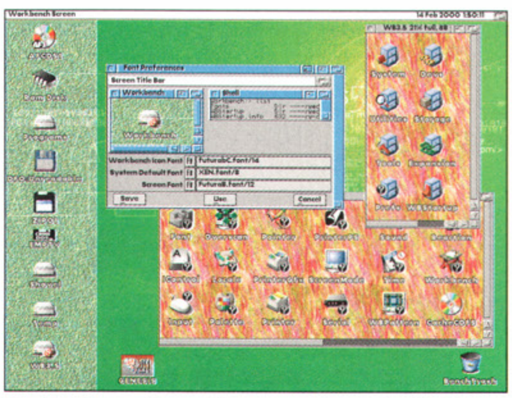
This tool is currently rather limited, however. The target fonts that it creates are limited in that, although there is an option to create fonts that may be drawn with a text colour according to the standard Font prefs settings, the outline colour is always 1, that is, black – when using the default palette. The author says that this may change in a future release, though.

Another limitation is that the fonts do not function as expected on CGX3 or Picasso96 screens with a depth of 15 bits or greater.

My final complaint is that a font that *CreateOutline* generates is physically larger than the original font. This a by-product of the way the new font is created, being two pixels wider and two pixels taller. This means that icon labels take up a greater amount of space on screen. In fact, you will probably have to go through your disks re-arranging and re-snapshotting all your icons.



...but it does so in a system-legal manner.



CreateOutline achieves the same ends as other hacks...

Nevertheless, you may prefer the cleaner approach that *CreateOutline* takes. Personally, I don't see why the OS3.5 team don't include an option to render fonts with outlines in the standard Workbench font prefs anyway.

Richard Drummond

BY: Stephan Rupprecht
WARE: Freeware
FROM AMINET: web address here please
SIZE: 3K

power computing ltd

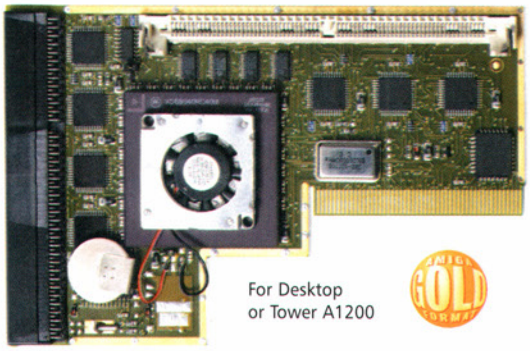
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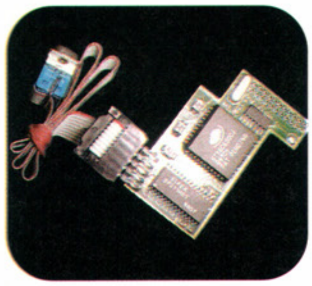
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Twister MKII High Speed Serial Interface

If you want to exploit all the potentials of your 56k V90 modem you will appreciate this high speed, buffered, serial interface, with its maximum speed of 691,200bps. To our knowledge, Twister MkII is the only fast serial interface that features (a working) Hardware Flow Control and includes the following features: 32-byte send and 32-byte receive buffer, EOF-Mode (saves internal overhead with programs like Miami), its driver enables real FIFO-based (First In - First Out) automatic Flow control - including hardware handshake, high throughput of up to 33,000 characters per second depending on the CPU used, very fast bit-rate of 460,800bps (guaranteed), 691,200bps (depends on the configuration) & compatible with Melody 1200.



Twister MKII Serial Interface £29.95

Blizzard Accelerator Boards

Accelerator card for the Amiga 1200 - 68040 40MHz with MMU/FPU, up to 128MB RAM, optional SCSI 2 controller. Available for Desktop or Tower Amiga.

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Blizzard 2060 50MHz MMU & FPU £369.95

Cyberstorm PPC Accelerator A3000/4000 T

The Cyberstorm PPC is the high-end PowerUp accelerator for Amiga 3000/4000(T) systems. The Cyberstorm PPC features a high-performance PowerPC604e RISC processor and a socket for either a 68040 or a 68060 companion processor. It´s memory expansion option can be populated with up to 128 MB of ultra-fast 64-bit memory. The on-board Wide-Ultra-SCSI controller follows the WIDE fast-20 standard and offers extended connectivity and highest performance with modern mass storage devices and other SCSI devices. An integrated high-speed expansion slot allows the connection of expansions such as the CyberVisionPPC.

This board is ideally suited for all A3000/A4000 users who already own an accelerator with either a 68040 or 68060 processor.

Cyberstorm PPC £POA
Cyberstorm MkIII Turbo 040 MMU & FPU £359.95
Cyberstorm MkIII Turbo 040 MMU & FPU £469.95

BVision PPC 3D Graphic Accelerator Card

The BVision PPC Graphics Card represents a new Generation of Graphic boards for BLIZZARD 603e or BLIZZARD 603e+ accelerated Amiga systems. BVision PPC provides an outstanding performance in all display operations and at high resolutions.

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Ready for virtual reality in 3D: The connector for the latest generation of 3D LCD shutter glasses allows for perfect virtual reality experiences.

Full connectivity: The Cyberstorm PPC provides an 15pin VGA standard connector and an 3pin Mini-DIN connector for use with an optional LCD-3D-Shutterglasses system.

BVision PPC 3D £POA





CyberVision PPC 3D Graphics Accelerator

The CyberVision PPC Graphics Card represents a new Generation of Graphics boards for CYBERSTORM MKIII or CYBERSTORM PPC accelerated Amiga systems. By use of the fast and modern display processor and the direct connection to the CYBERSTORM MKIII / PPC, the CyberVision PPC provides performance in all display operations at high resolutions. Specifications as BVision PPC.

CyberVision PPC 3D £POA
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Serious

X-SURF

X-Surf packs a whole load of extra slots and power into the space required for a single Zorro card

While we're no longer expecting phase 5's G4 accelerators (see news for further sad details), it looks like this issue is the calm before the storm.

We only have the x-cellent X-Surf to review as far as Amiga-specific hardware goes, although I'm sure you'll all be interested in the tests we've done on the two inkjet printers we have, and Simon's update on the latest emulators for your Amiga (you know what I mean).

We're visiting Blittersoft about a week from when I write this bit to see the first prototypes of the BoXeR off the production line, and now that the problems with WarpUp have been sorted, we fully anticipate coming away with a PowerPC version of *Fusion* to play with too. Power and Eyetech are both crowing about having Z4-based CyberVision 64/3Ds in, and we'll be covering ScanQuix 5 and a new scanner from Eyetech. In the meantime, sate yourself with the in-depth reviews we've got in this issue and look forward to what we've got lined up for you, my leetle Amiga chums...

Ben Vost

SERIOUS INDEX

X-Surf is the latest gadget from Individual Computers, the prolific makers of Buddha, CatWeasel, Gold and SilverSurfer I/O cards. The main purpose of the board is to provide low-cost Ethernet at 10 megabits per second – it was developed after VillageTronic's Ariadne 2 sold out – but digital wizard Jens Schönfeld has taken a typically ingenious approach to the board. X-Surf (pronounced Cross-Surf)

> **This breakthrough makes ethernet links practical for naive users. If you've already got NetFS installed it'll mate straight away with X-Surf**

is a Byzantine hybrid, providing six expansion connectors. One is dedicated to an IBM-style ISA slot, with a generic PC Ethernet card firmly soldered in place. One socketed MACH gate array and five tiny glue logic chips adapt the Amiga's Zorro 2 signals to suit this board. In the process, they generate a host of PC-style interface signals, and Schönfeld has used these to implement five further grids of expansion connections for cheap devices.

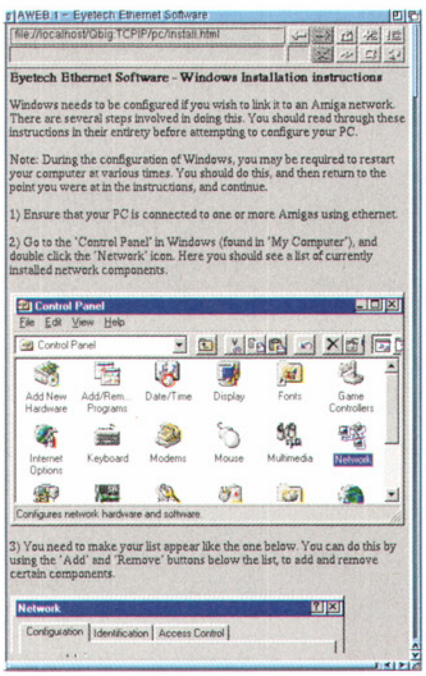
FREE PORTS

You get two A1200-style clock ports, compatible with the latest drivers for SilverSurfer serial accelerators. These will need software patches to accommodate other clock-port peripherals, although they are electrically compatible with A1200 internal interfaces, sound cards, CatWeasels and even clocks, if you really need more than one...

The 26-way custom connector familiar from Zorro CatWeasel and Buddha boards can accommodate a ribbon cable to the GoldSurfer, providing one extra parallel and two fast serial ports. The Ethernet card has a T-piece for a daisy-chain of coaxial cable, or a modern RJ45 connector.

You can't use both at once, and need a terminator to put X-Surf at either end of a coax network, or an Ethernet hub to link more than two machines through RJ45s and twisted-pair cable. These extras are relatively cheap.

Finally there are two IDE ports, each capable of supporting a master and slave drive. One uses the standard 40-way internal IDE connector, ideal for CD-ROMs and 3.5" hard drives. The other is a close-spaced 44-way header, like the one inside the A1200. This suits a 2.5" drive, but it must be a low-power one as the connector is rated to deliver a maximum of 1.5 watts. That's adequate for laptop drives that demand no more than 300 mA at five volts.



HTML explains how to share files and printers with Microsoft.

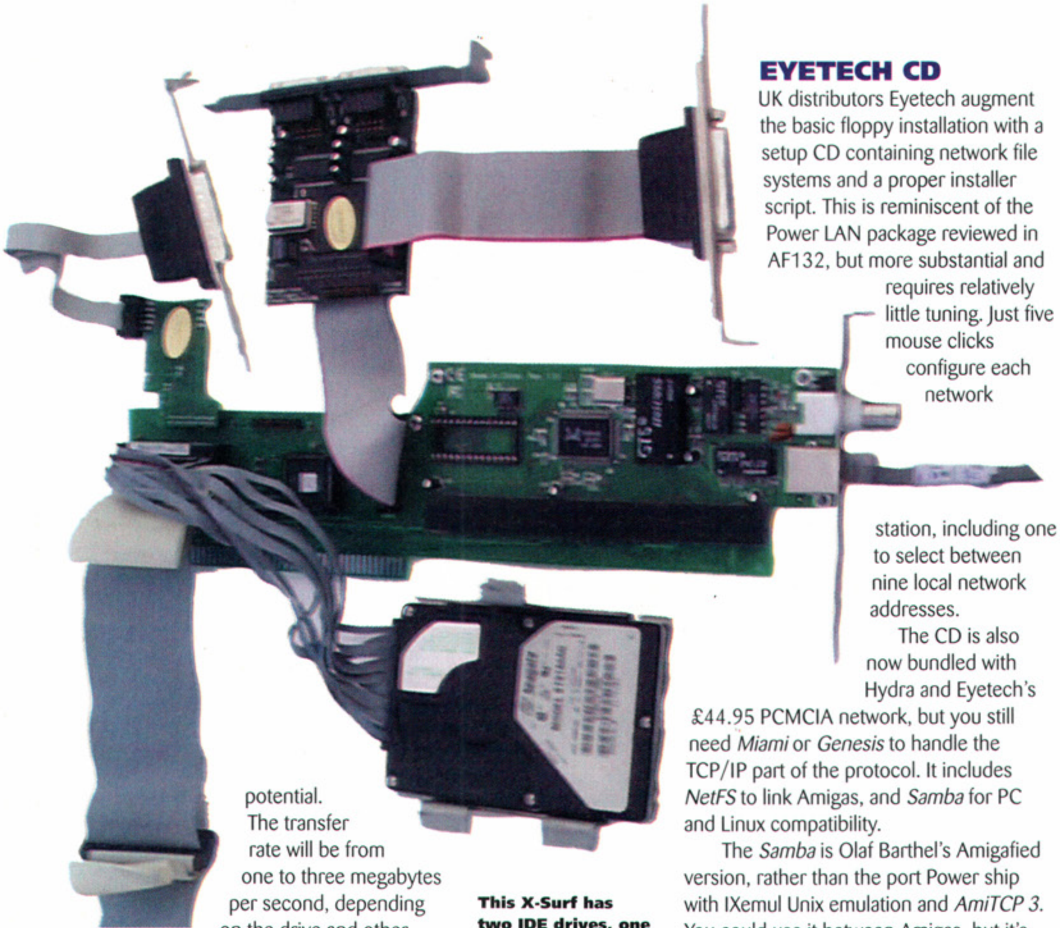
PC WEDGE

All these ports take advantage of the PC-style signals; the Gayle chip in an A1200 uses those to implement the motherboard IDE and clock ports, always intended for cheap IBM-style devices, and once Individual Computers had an adapter for the ISA network card, and the logic for their own 26-way port, the A1200 expansion ports came almost for free.

This is not a full Zorro to ISA bridge – it only implements the signals needed for the Ethernet card and extra ports, and the ISA part is hardwired. The prototype looked a bit untidy, with hand-soldered connections between the boards, but the production unit has a black fibreglass cover over the component side of the ISA link, and a brace riveted between the top edge of the Zorro and PC cards, so they fit together solidly and it's hard to see the join.

LIMITATIONS

The IDE ports are fixed-speed, lacking the fast PIO modes of Power's Flyer or IDEFix Express. They will work with modern EIDE fixed drives, but will not deliver their full



potential. The transfer rate will be from one to three megabytes per second, depending on the drive and other activity on the card; the IDE ports compete for Zorro 2 time with Ethernet and optional I/O expansion. You cannot boot from X-Surf devices, and there's no provision for old slow drives that Buddha's configurable access timing can accommodate.

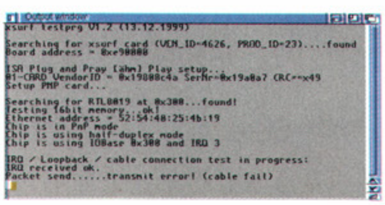
Even so, the ports are adequate for small notebook drives, removable LS120s or ZIPs, and all but the fastest ATAPI CD-ROMs. A special version of Oliver Kastl's *IDEFix* software is needed to bring these ports to life. That was not supplied with the X-Surf we tested, but scheduled to be available by the time you read this review.

The Ethernet is enabled by a standard SANA 2 driver, and comes with example configuration files for *Miami 3.0* and *AmiTCP*. There's no automatic installer, but only one file need be dragged to DEVS/Networks, then notified to your network file system. A useful test command checks out the hardware and net connection – it even spotted a fault on the first cable I tried, averting a lot of frustration.

Custom NetBSD, Linux and MNI drivers are planned but not yet available, and it will surely be a while before software enables all the X-Surf's expansion potential.

If you need these, or the IDE support, you should check the maker's website at http://www.jschoenfeld.com before committing to purchase X-Surf.

This X-Surf has two IDE drives, one parallel and three serial ports connected, yet it still has capacity for three more hardware devices!



X-Surf comes with a confidence-boosting test command.

EYETECH CD

UK distributors Eyetech augment the basic floppy installation with a setup CD containing network file systems and a proper installer script. This is reminiscent of the Power LAN package reviewed in AF132, but more substantial and requires relatively little tuning. Just five mouse clicks configure each network station, including one to select between nine local network addresses.

The CD is also now bundled with Hydra and Eyetech's £44.95 PCMCIA network, but you still need *Miami* or *Genesis* to handle the TCP/IP part of the protocol. It includes *NetFS* to link Amigas, and *Samba* for PC and Linux compatibility.

The *Samba* is Olaf Barthel's Amigafied version, rather than the port Power ship with IXemul Unix emulation and *AmiTCP 3*. You could use it between Amigas, but it's clumsy compared with *NetFS*. There's nothing to stop you running both at once, if you've got a mixed network.

NetFS can share any number of drives between nine Amigas, or more if you edit the configuration files manually. The beauty of Eyetech's installation is that it hides all the complexity and can be set up and controlled entirely from Workbench.

This breakthrough makes Ethernet links practical for naive users. If you've already got Power Computing's *NetFS* installed on other machines, it will mate straight away with X-Surf and Eyetech's configuration.

The CD also includes instructions to configure Ethernet sharing on a PC with Windows 95 or later. This HTML tutorial is well-structured, in twelve illustrated steps, but still requires plenty of typing, dozens of clicks and several resets, confirming that Amiga configurability is still streets ahead.

If your budget runs to an extra £20 per station, *Envoy 3* is the ideal way to network Amigas – it supports Workbench features like ARexx and notification, updating remote windows automatically as files are moved around. *Envoy* uses SANA 2 directly and has no need of TCP/IP, though it can share an interface with a TCP/IP stack.

NetFS managed transfer rates of about 300K reading and 100K per second writing between X-Surf and an A1200 with a CNet card. *Envoy* pushed this past 430K per second reading and 310K writing, without noticeably slowing other tasks at either end of the link.

Those are respectable speeds for Zorro 2 Ethernet, probably limited by the PCMCIA card at one end of the link. CPU power at each end is significant – disabling the Blizzard 1240 and Cyberstorm 2 caches sliced more than 100K per second off both figures, giving a feel for the likely speed between 68020 or basic 68030 systems.

OKAY SO FAR

X-Surf already implements SANA 2 networking, and full-feature buffered serial and parallel ports via Gold and SilverSurfers. Typically like multi-port Amiga expansion units from GVP to Z4, the hardware can do more than the software will yet allow, but the close resemblance between X-Surf ports and existing peripherals means that new drivers should be relatively easy to code.

I can imagine owners of dedicated Zorro Ethernet cards switching to X-Surf to squeeze more ports out of a scarce Zorro slot – though they might need to punch extra holes in their Amiga case to accommodate all those extra sockets. It's a pity X-Surf does not come with a TCP/IP stack – VillageTronic's reborn Ariadne is bundled with a cut-down *Genesis*, as well as Novell network emulation – but you might well already own a suitable one.

X-Surf worked fine with the *Miami* demo bundled with Workbench 3.5 and on *AFCDs*, although you must click its 'connect' button once an hour to keep the link up. The registered version has no such limitation. You'll need the $60 *Miami Deluxe* to dial the Internet and use Ethernet simultaneously, but this does mean that when one machine is online the entire network gains Internet access. At £24.95, the separate *Genesis* stack now available from Eyetech is a more economical way to connect several ways at once.

X-Surf would benefit from more work, but that's hardly surprising considering its potential for bolt-on goodies. It already makes fine use of a Zorro slot, and seems certain to attract enough users to justify further software development.

Simon Goodwin

SUPPLIER: Eyetech
WEB: http://welcome.to/amiga.world
TEL. 01642 713185
PRICE: £79.95
REQUIREMENTS: Zorro II slot, TCP-IP stack and/or Envoy

Pros and Cons

- **+ SANA 2 compliant Zorro network driver.**
- **+ Five potentially useful input/output ports.**
- **+ Easy Gold and SilverSurfer expansion.**
- **– IDE ports are basic and lack software.**

OVERALL VERDICT:
Budget ethernet and bags more potential.

83%

Emulation Update 2000

Catch the latest news in the prolific field of emulation on Amigas

We're overdue for another emulation roundup; it's been two years since my emulation series, which is now enshrined for posterity on Tomas Amsrud's website, and a year since the last *AF* update.

In the last year, the main competition has been in Spectrum 128 and Commodore Plus 4 emulation, although heavyweight emulators continue to be ported from other platforms to PPC (see: "Power Hungry").

Some games are playable on a 68060 but it falls short of full speed even on an Apollo LC75, the fastest 68K around

The Plus Four was Commodore's semi-serious follow-up to the best-selling C64, with the same 64K RAM, extra ROM containing a better BASIC and some simple applications, as well as simpler graphics and sound. The C16 was a cut-down version with half the ROM and a quarter of the RAM. The first Plus 4 emulator for Amigas was *A4*, which worked okay in BASIC but had risible support for graphics. New arrivals *Flamingo* and *CP4* set out to do the whole job – and they make a good stab at it. Both are from Hungary, and come with clear English documentation in AmigaGuides.

Lacking hardware sprites, the Plus Four is easier to emulate than the C64. Like *Shapeshifter*, *Flamingo* and *Fusion*, *CP4* uses plug-in External Video Drivers, with

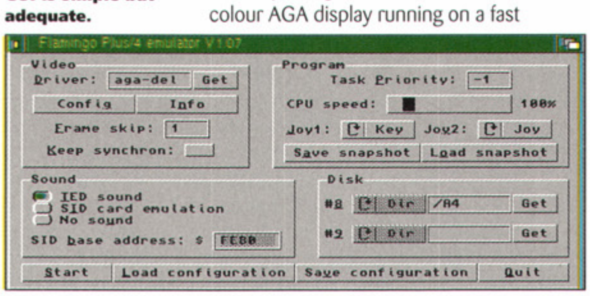


X128 can emulate all sorts of Spectrum X128.

source if you want to hack your own.

Flamingo can display on CyberGraphX as well as native Amiga screens, with optional PPC support for display format conversion. Emulation is frame-based so clever game displays may glitch, but most look good and you can skip frames to get good speed on a 68030 or slow 68040. *CP4* generates graphics one scanline at a time, via Picasso96 or Amiga chips.

Despite this extra precision, it's relatively fast, claiming almost full speed when updating alternate frames on a 128 colour AGA display running on a fast



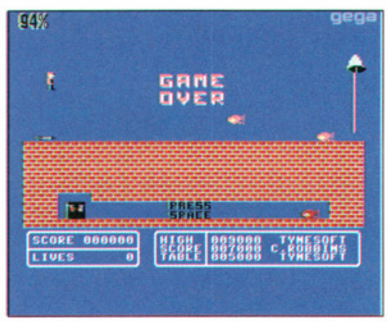
Flamingo's Plus 4 GUI is simple but adequate.

68030. A graphics card is recommended if you want to run Plus 4 programs in a window on Workbench. *CP4* and *Flamingo* support optional C64 SID sound expansion via an add-on library. *Flamingo* uses its own snapshot file format, and floppy disk access is redirected to Amiga sub-directories. *CP4* has the advantage of supporting D64 disk images and direct access to genuine 1541 drives – both features familiar from C64 emulators that use the same drives.

Flamingo and *CP4* are streets ahead of *A4; CP4* is a more ambitious package, with an integrated disassembler and simple assembler. Both are freely distributable, and well worth trying if you've ever used a C16 or Plus 4, but the Commodore ROMs are not on Aminet or our CD, for copyright reasons. The emulators include instructions on where you will find them, and a manual for Commodore BASIC 3.5 is on *AFCD50.*

SPECTRUMS

There are many emulators for the original 48K Spectrum but the multi-channel sound and bank-switched memory of the later Spectrum 128 poses more of a challenge. I reported on two early attempts at 128K ZX emulation last year, and *CBSpeccy* and *Spectrum 128* have been updated since. *CBSpeccy* uses the MMU directly, making it the fastest Spectrum 128 emulator around, and the only one worth trying on a 68030. Version 0.25 recognises more systems than the earlier ones, including A3000s and most A1200s with the full 68030 chip. It also tries to program the 68040 and 68060 MMU directly. It's good when it works, but still liable to crash your Amiga. *Spectrum 128* has been updated a couple of times. It's impressively stable but slow, as much of the emulation core remains in Blitz BASIC.



They just don't make characters like SirKnight anymore.

ELECTROSTATIC

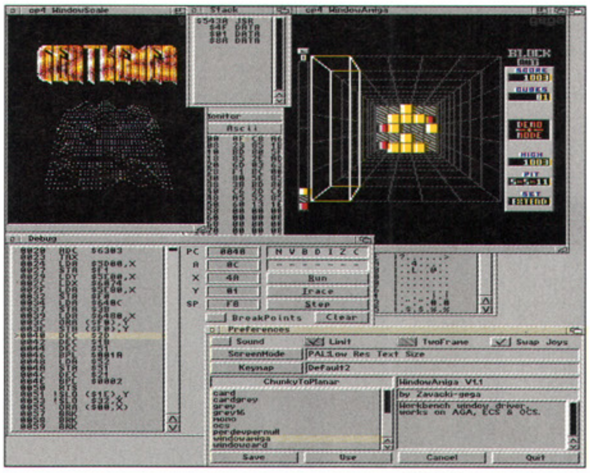
***Electrostatic* is a rare type of emulator. It's a static binary translator rather than a stepwise imitator. It corresponds to normal emulators as a compiler does to a program interpreter. The only similar Amiga tool I've encountered is *Convert*, supplied with the full version of A64 on the C64 Sensations 2 CD. *Convert* translated 6510 binary code into Amiga 68K instructions.**

***Electrostatic* does the same for the 6507 chip in Atari's VCS 2600 console. It copes better because Atari console programs are in ROM, unlike most C64 titles, so they're unlikely to use self-modifying code which confounds one-shot translators.**

There are already several 2600 emulators for the Amiga. The VCS started a line that led to the Atari 800, Atari arcade machines, and ultimately the Amiga. It's crude but recognisably part of the family we know and love. The problem with the existing emulators *Stella* and *V2600* is that they were originally written for Unix rather than Amiga systems, so they're big and CPU-intensive, wasting time with a lot of unnecessary work, converting screens from chunky format, laboriously decoding each instruction.

***Electrostatic* supports sound, a screen mode requester and one joystick. Version 2.2 on *AFCD51* is unfinished but ran getting on for half the small ROM cartridges the author tried.**

Speed limiting, large ROM paging and multi-player support are next on his update list. The CPU engine is impressively fast, but most of the time is spent emulating the 2600's Stella chip. Jay Miner's custom hardware is a tougher nut to crack than Chuck Peddle's 8-bit processor.



Windows and debug options abound in CP4.

INTERNET CONNECTIONS

SpectrumASp: http://www.greew.freeserve.co.uk/ASp.html
Planet Sinclair: http://www.nvg.ntnu.no/sinclair/planet
Spectrum128: http://www.geocities.com/siliconvalley/horizon/1241/
Amiga X128: http://www.lagernet.clara.co.uk/
CBSpeccy: http://www.neworder.spb.ru/codebusters/
Plus4: http://www.ping.at/members/tomking/
A4: http://www.klte.hu/~gatig/cp4.htmlftp://c64.rulez.org /pub/plus4ftp://nic.funet.fi: /pub/cbm/firmware/computers/plus4/
OthersfMSX: http://surf.to/fmsx
Basilisk: http://iphcip1.physik.uni-mainz.de/~cbauer/
PPC ports: http://www.amidog.com/emu/
ANES: http://www.emuclassics.com/anes/

Some games are playable on a 68060 but it falls short of full speed even on an Apollo LC75, the fastest 68K around. Now there are two new contenders: a port of *X128* from Unix systems, which runs very nicely on my 68060; and *ASp* from Ian Greenway, who has already tamed the Spectrum 128 sound chip and is working on 128K paging with Thor's mmu.library.

ASP BITES

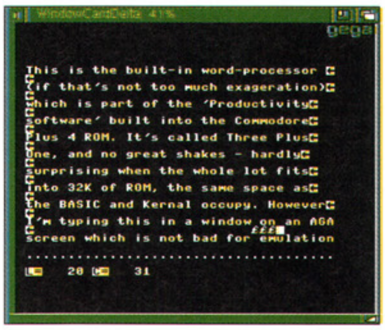
It's early days for *ASp*, but the emulator is small, authentic and easy to use – it's mainly controlled with function keys. Unlike most 48K emulators, it runs at the right speed on 68040s and 68060s, and at almost full speed on a 50 MHz 68030. *ASp* is system-friendly and multi-tasks, leaving spare CPU time to other programs. You can run three copies at once on a 68060. The Z80 core handles undocumented instructions and flags correctly. *ASp* does not yet support beam sync or retargetable graphics, but works well on ECS and AGA. If 128K paging can be implemented it could usurp *CBSpeccy* on slower machines, and promises to be relatively stable and reliable.

X128

If you've got a fast Amiga, you'll love Paul Hill's port of the Unix Spectrum emulator *X128*. It is well-adapted to the Amiga, and can emulate the Russian Scorpion 256K as well as Sinclair 48K and Amstrad 128K Spectra. *X128* also impersonates a stack of classic ZX add-ons. It eats the ubiquitous tape and snapshot formats on CDs and the web, and can save SNA, Z80, TAP and VOC files. I found *X128* stable in Sinclair modes, but the task sometimes fell over when emulating an Amstrad Plus 3.

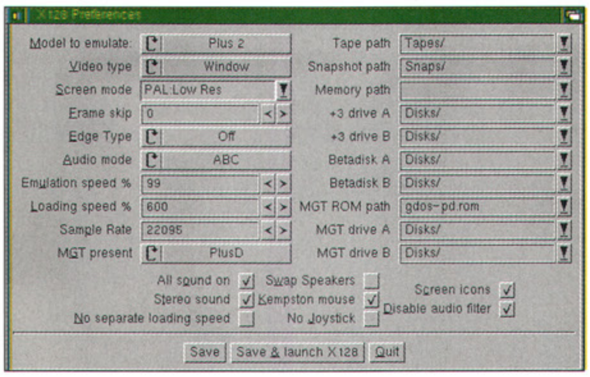
Thankfully it did not take the rest of the system with it, as *CBSpeccy* can. All *X128* lacks is Amiga-specific documentation, though GUI preferences and function-key help make most of the options obvious. It's a pity *X128* really needs a 68060 – you could use it on a 68040 by skipping display frames, but the compiled C processor emulation is too slow for lesser machines.

Simon Goodwin



CP4 can put Plus 4 applications on your Workbench.

GadTools preferences distinguish X128 from lazy ports.





AGA updates are rather sluggish in a Workbench window.

POWER HUNGRY

AmiGenerator is one of over a dozen emulator updates on this issue's _AFCD_. It's a port of _Generator_, the Unix Sega MegaDrive emulator. The Amiga version requires _WarpUp 4_ and AGA or _CyberGraphX_. _GBE_ is a WarpUp emulator for GameBoy and GameBoy Color with the same graphical requirements.

VGB has been ported to PowerUp, though it's not much faster than the real thing, apparently because of the portable ANSI C source. _SNes9x_ is a Super Nintendo emulator, said to be faster than _WarpSNES_, but like the _VGB_ port, it lacks sound and requires CyberGraphX.

TrueReality is a Nintendo 64 emulator with demanding requirements; you'll need a PPC with at least 32M RAM, _WarpUp 4_, _CyberGraphX 3_ and _StormMESA_ to get a peek at _Mario64_. _DarcNES_ is a combo Sega and Nintendo emulator, with a dearth of documentation; the Aminet archive contains just a half meg PowerUp executable, lacking even a startup icon.

Handy is a similarly cryptic Atari Lynx emulator from the same stable. The Nostalgia front-end sets out to run Sega MasterSystem, Megadrive, NES and Super Nintendo cartridges, as well as Atari Lynx, PCEngine, ColecoVision and GameBoy titles. It doesn't actually do the emulation itself, using other PPC-emulators to do the hard work, but provides a consistent GUI for Unix ports which otherwise require arcane shell invocations. The Savage video driver for _ShapeShifter_ now comes in a WarpUp version which uses the PPC for video updates, freeing the 68K for Mac emulation. Updates may be five times faster than with a 25 MHz 68040. _SavagePPC_ is crippled shareware; $10 registration unlocks high resolution and colour modes.

BASILISK

Christian Bauer may have stopped work on _ShapeShifter_, but his Mac emulation efforts continue with _Basilisk_, an open-source 68K Mac emulator written in C. _Basilisk_ runs on Amiga OS 3, BeOS, Windows NT 4, and various Unix systems, with SCSI, Ethernet and CD support. The big difference between _Basilisk_ and _ShapeShifter_ is that it makes no attempt to emulate Mac hardware. Instead, it provides Mac system extensions that retarget programs to the native hardware. This works surprisingly well, as hardware-bashing programs are especially rare on the Mac. Some versions of _Basilisk_ can emulate the old 16-bit Macs as well as Mac 2s. The Amiga version runs natively on the 68020 or later, offering AHI sound and _Picasso96_ PIP displays. It's pretty slow on other platforms as it uses the UAE emulation engine.

UAE

Sam Jordan is working on a WarpUp version of _UAE_, with improved sprite emulation and collision detection. There have been small improvements to the Windows version of _UAE_, with fixes in the blitter, FPU, CD and printer emulation, and stable MIDI output (at last) though it still lacks MIDI input.

Stonkin' toons

Tony Horgan relaxes in his comfy chair and listens to the delights of four top-rated Amiga-produced music compilations



Various Artists
Back in Time II

Memories eh? It's my 17th birthday, only my second day of proper work after leaving school, and I'm sitting in a magazine office with Chris Yates and Jon Hare from Sensible Software. They're talking me through their new game. It's called *Wizball* – and I must say, I'm mightily chuffed with the whole situation…

I bet thousands of you reading this have got your own *Wizball*-related memories tucked away somewhere, ready and waiting to leap out at you, should you ever hear that music again. If it's not *Wizball*, it'll be *Ghosts 'n' Goblins*, the loading music from *Rambo* or *Green Beret*, or the theme from *Sanxion* that was on the *Zzap! 64* cover-mounted tape. Whatever it is, it's probably on this CD. Quite obviously the sequel to *Back in Time 1*, this is a further collection of classic C64 tunes from the likes of Rob Hubbard and Martin Galway, re-arranged and re-recorded using high-tech studio equipment.

The authentic C64 trademark sounds have been retained, so expect lots of nasal synth sounds and warbling arpeggios. Extra ambience and depth has been added in many places, and the overall sound quality is top notch. The extensive CD booklet adds plenty of background info too. If it's nostalgia you want, look no further.



Zaranyzerak
Modulized

Now I know it's not rocket science, but to me this CD sounds as if it was made with an Amiga. As far as I know, the 15 tracks you get here aren't taken from games, but they still sound very Amiga-ish. That's to say, I couldn't imagine hearing them in any context other than emanating from an Amiga. You're going to have to decide for yourself whether that's a good or a bad thing.

What we've got is a collection of tracks with a generally moody slant. Sampled chords play a major role, unfortunately lending many of the tracks a rather predictable pattern. In fact, predictable is probably the most apt description for the whole thing. Anyone who has listened to a few mods in their time will recognise many of the samples which have been doing the rounds since the first days of the SoundTracker "ST-01" disks. Some more invention in the regimented melodies and rhythms would also have helped.

On the positive side, there's some stereo action in there, which is nice to hear, as that's often something that's forgotten in music that has been produced on basic equipment.

There's certainly promise here. With a bit more breathing space and funk in the melodies and beats, the next Zaranyzerak CD could be quite nice.



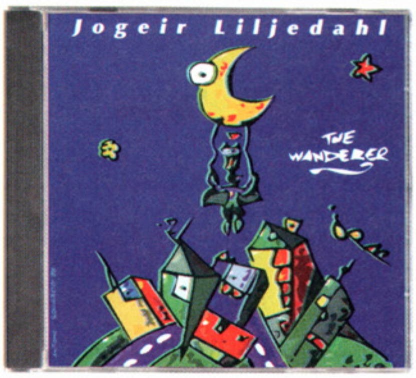
Various Artists
Immortal

One day in the '80s, someone sampled a pan pipe. Then someone sampled that sample, and before we knew what was happening, that breathy flute sound had multiplied like some radioactive super-cockroach mutant and had taken over the world. Eventually it was stamped out, but *Immortal* is here to drag us back to those days when it ruled supreme.

It's another old-game-soundtracks-replayed-with-new-equipment CD. We're "treated" (for want of a better word) to seven tracks from Shadow of the Beast, all of which seem to use the same sounds, the most prominent of which is that bloody pan pipe. However, once that's over with, the CD breaks out with a sudden and unexpected bout of variety.

Unlike *Back in Time II*, we're firmly rooted in Amiga territory now, so we've got tunes from games including *Superfrog, Project X, Turrican* and *Alien Breed 3D*. It doesn't score as highly on the nostalgia-scope, since the themes aren't as old, and neither do any of them evoke any feelings of note on my part, but they may well pull your chain.

Extra value is added via a CD-ROM section that contains a rendered MPEG movie and lots of information in HTML format. It's all very nice, but there's nothing really outstanding here.



Jogeir Liljedahl
The Wanderer

Of all the CDs here, this one jumps out as by far the most 'complete product'. It is, if you like, "proper music" in the sense that it doesn't rely on nostalgia, or even a simple 'Amiganess' for its appeal. For a start, it's got a very attractive CD cover, and that same high level of professionalism is evident in the music itself.

This is not a collection of music that I could easily categorise, but to give you some idea, it's pretty laid back, a tad folky and perhaps even a bit Gaelic in places. Although it's mostly sequenced, many of the sounds are simulations of acoustic instruments, rather than techno-style bleeps, and there's even a bit of guitar in places, which sounds live (such as on the version of the old favourite *Guitar Slinger* mod).

While I can't say that much of this CD really fills my bag, it is nice to hear acceptably pleasant music that appears to be perfectly happy just being what it is, without aspiring to being something it's not. And what this is obviously not is an attempt to pay homage to Jean Michel Jarre, break into the pop charts or to be a club record.

As background music it's really quite soothing in an undemanding way, which can't be bad.

Tony Horgan

HP Deskjet 610C

Are bargain-basement inkjets a sensible purchase for your Amiga? We roadtest HP's current offering.

Amiga owners still with an old dot-matrix printer may be considering replacing it with a new ink jet model. The problem, however, is getting a driver to support your new printer. A safe option might be a Hewlett Packard model. The company has a reputation for reliability and virtually all of their DeskJet range support PCL3 (HP's Printer Command Language) – so compatability should not be a problem, even if you cannot find a specific driver. The HP610C is at the low end of their SOHO range.

The quality of output from the 610C when using the supplied Windows driver is superb considering its price point. Letters and images are crisp, and colours match what you see on screen.

Things fare less well with the Amiga depending on how and with what software you are using the printer.

Currently, the only driver specifically supporting the 610C is the one shipped with the BoingBag update for OS3.5. Those using older Workbench versions, or software with custom printer support (for example, *TurboPrint* or *GhostScript*) can achieve varying degrees of compatability with a driver for older members of the DeskJet range.

WORDS AND PICTURES

Like the majority of printers, the HP610C supports two modes of printing: text and graphics. In text mode, you print plain text using the HP610C's built-in fonts (or Agfa fonts which you download to it).

Any old driver should be sufficient for this, even the Generic Workbench one, and the printer behaves exactly as it does with Windows, albeit with less control. For instance, Workbench allows you to choose the print pitch and quality for text, but not the typeface. Also, the 610C supports three qualities of printing, Workbench only two; the printer's Best mode equates to Workbench's Letter mode, Normal to Draft, while the EconoFast mode is not selectable from Workbench.

You could conceivably control the printer by sending it the appropriate escape sequences, but the manual makes no mention of what these are.

The first thing to realize when printing in graphics mode is that, unless you are using the supplied Windows driver, the maximum resolution is 300x300 DPI. This is the physical maximum of the printer; the higher resolutions are faked with HP's PhotoREt Technology, only available in the Windows drivers. HP will not license it to third parties.

One of the many things that were improved with OS3.5 was the printer support, with the printing of high and true colour images now supported. Of course, these colours are achieved in hardcopy by dithering with the printer's four pens.

The Workbench driver also permits shingling and depletion in 300x300 DPI resolutions for better image quality. Despite the resolution enhancement supported by Windows, the clarity of images does not seem to be noticeably greater than that generated under Workbench. What is noticeable is the colour matching. Here Workbench is poor, with its limited colour correction; darker blues and greens especially, tend to be indistinguishable from black. I suppose one could use an image processing package to lighten images before printing, but it's a rather hit-and-miss affair.

Surprisingly, I achieved even poorer results with *TurboPrint7*, the replacement printing system for Workbench. There is no specific *TurboPrint* driver for the 610C, but since I had experienced good compatibility with a third-party HP600C driver for OS3.1 and *GhostScript* performed well with its 550C driver, I did not expect this to be a problem. However, I couldn't get TurboPrint to perform reliably at all with the 610C.

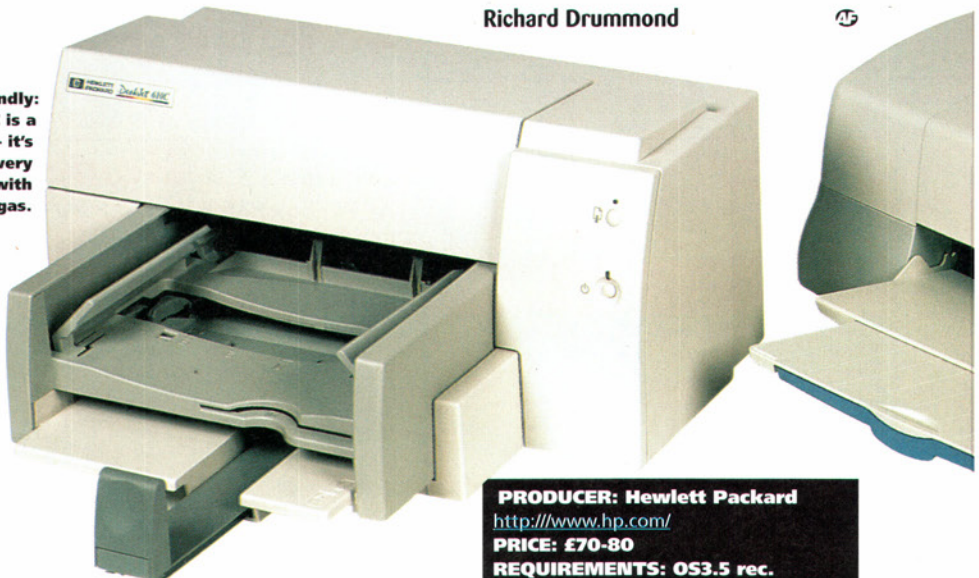
WHAT'S AN AMIGA?

There are other shortcomings when using the 610C with an Amiga. The HP610C supports photorealistic output with a special ink cartridge, but not with the current Amiga drivers. And with Windows a tool is supplied to align the colour and black print heads and to clean the print heads – both operations which need to be performed periodically. There is no such tool for Workbench, although TurboPrint is shipped with one.

The HP610C is a great budget printer, but unfortunately, Hewlett Packard have committed the sin of believing that the whole world runs Windows. This would not be such a barrier if HP were more open with technical details on their products, but they're not.

Good results can be obtained in Amiga use, but it will take some experimentation to get there.

Richard Drummond



Amiga unfriendly: the HP610C is a good printer – it's just not very clever with Amigas.

PRODUCER: Hewlett Packard
http://www.hp.com/
PRICE: £70-80
REQUIREMENTS: OS3.5 rec.

Pros and Cons

- \+ Good value for money.
- \+ Great print quality and colour.
- – Just not with Amiga software.
- – Documentation lacks detail.

OVERALL VERDICT:
A good, cheap printer which again shows up AmigaOS's deficiencies.

82%

Epson 1160

Just think, 297mm instead of a mere 210, 420 instead of a mere 297, just how nice would an A3 printer be for you?

AMIGA FORMAT GOLD

Bigger is better, so they say. So the fact that Epson have released an A3 version of their popular Stylus range must be a good thing. Our "Making Money" feature last issue forgot to mention one thing (well, hopefully only one thing!) – unless you are only making signs for car windows or menus and are not trying to produce posters, being limited to A4 can pose something of a problem. The real money is out there for people who can produce posters that are, well, poster-sized, but most folk won't be able to offer the kind of bespoke service that you'd be able to with an A3 printer.



Big and bootiful: the Epson Stylus 1160 is an ideal printer for proofing your magazine.

BIGGER COSTS MORE

It used to be the case that A3 printers were vastly more expensive than their "standard", or A4 counterparts – even to the order of two to three times the amount. I guess the printer manufacturers probably rightly assumed that the only people who'd want or need an A3 printer would be those looking to make a quick buck out of their printing and charged accordingly.

> *Epson's inkjet printer gives you all the quality you've come to expect from the Stylus range – only bigger*

However, the quality from these early printers often (in my experience) didn't match that of the regularly-sized versions, so folk often made do with two sheets of A4 stuck together. Fortunately, Epson's A3 Stylus 1160 inkjet printer gives you all the quality you've come to expect from the Stylus range, only bigger.

The printer itself is big enough to print A4 landscape or portrait A3 and while it isn't edge-to-edge printing, the margins around the page are still the same as for an A4 bit of paper, which means that they are much less noticeable than the same margins on the smaller sized page – if you see what I mean. I'm trying to say that proportionately, they take up less space on the page. Clear now?

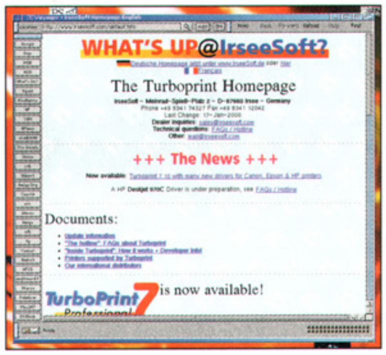
ROUGH PROOFS

This printer is, of course, ideal for getting rough proofs of full bleed A4 pages you might want to output to film for your own magazine, although not being PostScript-based means that you'll either have to go through the medium of *GhostScript*, or accept a little less fidelity than a true PostScript colour proofing laser printer would give you (but also the much-reduced cost!). Since it can handle A3, it can also handle A4 plus, which is often used as a cheaper alternative to A3 for proofing and is more readily available in inkjet-specific paper.

The printer itself is modelled on, and is an upgraded version of, the 900 series and works with that driver from TurboPrint – that specific driver is to be found in the latest version of *TurboPrint v7.10* http:/www.irseesoft.com. It's no deeper than my Stylus Photo 700, though it's plainly a lot wider. It prints out on A3 just as well as its smaller brothers do on A4 and, as such, leaves me with little to write about without retreading old ground as to the quality of such printouts.

PAPER CHASE

The only trick with this printer would be to find A3 speciality inkjet paper to the same quality of the A4 paper that's widely available. I must admit to not having found any yet, especially not T-shirt transfer paper, which would be great for full-body transfers of images, or even printing tablecloth designs.



You'll need Turboprint if you want to get the most from the 1160.

In terms of speed of performance, the Epson Stylus 1160 is as fast as my Photo but since it can cover a lot more space, A3 pages will necessarily take a lot longer to print out and consume far more ink. Even so, with replacement inks getting better and better in quality, even this one poor aspect of inkjet printing is overcome.

Overall, there isn't much else to say about the Epson 1160, except to urge you to buy one if you require larger than A4 printing, but also to remember to purchase *TurboPrint* to make sure that you get the most from it.

Ben Vost

AVAILABLE FROM: Pretty much anywhere
CONTACT: Epson 01442 227227
PRICE: £315
REQUIRES: TurboPrint 7.10

Pros and Cons

- No Amiga drivers means you have to buy TurboPrint.
+ A3 printing!
+ A4 full-bleed printing!
+ Quiet and fast.

OVERALL VERDICT:
Beats the rule that said you can pick any two out of fast, good and cheap.

90%



Workbench



Simon answers your questions about hardware expansion

Email: amformat@futurenet.co.uk, putting Workbench in the subject line, or write to: Workbench • Amiga Format • 30 Monmouth Street • Bath • Somerset • BA1 2BW.

GVP MODEM

I have an Amiga 4000/040 fitted with a GVP IOExtender board. I would like to use the serial port for my modem but cannot find the necessary details. Do I use the AUX: setting for the serial port? What is the RS232 setting? Do I use the max baud setting? If so, what buffer setting? In GVP SetDevice, I get the message: "Serial: gupser device unit 100 Parallel: parallel device unit 0".

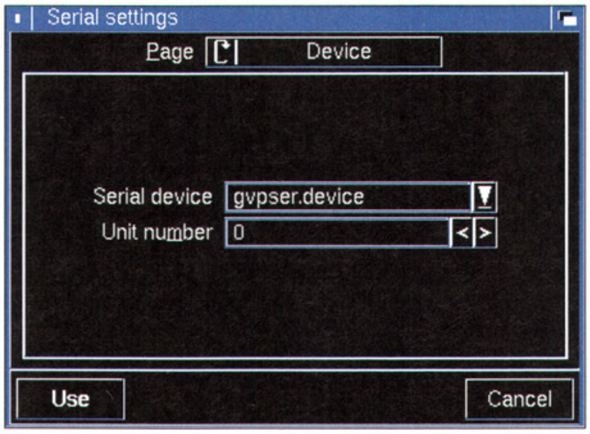
Thomas Cole
Lichfield

The GVP I/O card is a parallel and serial interface, and should have come with a 50 page manual. Your long list of hardware does not mention the programs you're using to communicate with the modem, and that's where the crucial information must go.

The AUX: device is a DOS driver used to communicate with a serial terminal. It's irrelevant in this case as you're not using a terminal, and not using AmigaDOS – modem applications talk directly to the 'device' code that provides a standard interface to the hardware.

GVP SetDevice is used to divert attempts to open the motherboard ports so that the GVP ones are used instead. There's no need to do this, as modern modem software can use any serial device and unit number, and programs that only ask for Commodore's 'serial.device' often bang the motherboard hardware anyway, so they can't be redirected.

The SetDevice command in UserStatup reads the tooltypes of the GVPIO program in your SYS:Expansion drawer. It's useful for diverting printer output from the motherboard parallel.device to gvppar.device, freeing up the motherboard port for things only it can manage, like ParNet or 8-bit sampling. The GVP parallel output is less flexible, but it's faster for simple printing.



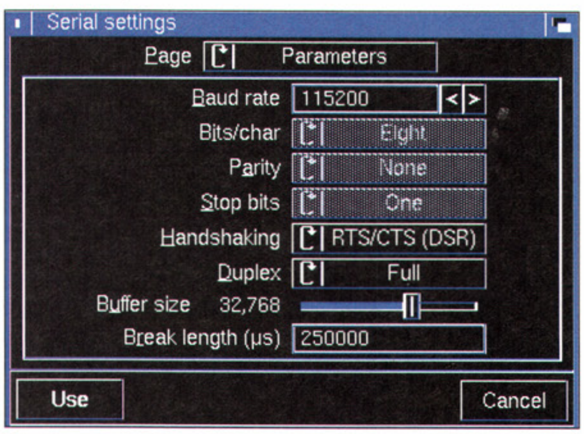
This diverts Term from Commodore's serial port to the first GVP one.

You asked about modem configuration. For the sake of illustration, I'll assume that you're using Term, as it's on AFCD51 and freely distributable. NComm and Internet stacks have similar configuration windows. Plug your modem cable into the nine pin socket on the back of the IO Extender card. This is marked port 0 on the board.

Term has several windows under the Settings/Serial menu. The Device one lets you select a particular hardware port, and Parameters is where you put the baud rate. Set the device name to "gvpser.device" – the spelling and case must be exactly right, with no capital letters.

The default GVP port is unit 0, so leave zero in the 'Unit' box. If you have the optional second connector, you'd select unit 1, and so on if you've got several boards in one computer. The reference to unit 100 in your preferences is definitely wrong, unless you're the lucky owner of 51 Zorro 2 slots…

You've got a 56-kilobaud modem, so the port baud rate should be at least 115,200 baud, so the modem can compress and expand simple text files like email and news without having to wait for unpacked communication with the computer. This is the top rate explicitly specified in the GVP serial preferences, but 'custom' rates can be manually configured.



Term works modems nicely at 115,200 baud with a 7 wire cable.



Tooltypes used by the GVPIO expansion driver.

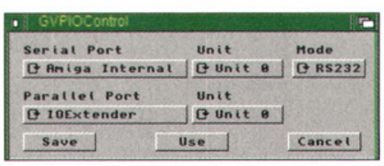
You might try 230,400 baud, but older modems won't go that fast and it's unlikely to make much difference given the limit of 56,000 baud – at best, with a following wind – for the telephone circuit. The buffer size can be left at the default setting – 512 bytes in the preferences, and various sizes in Term and other software depending on the data being buffered.

These buffers offer 'fine tuning', most useful when you've got a slow CPU and need data to be stored temporarily before it can be processed. GVP's preferences are only used for commands like AmigaDOS COPY, overridden by applications with their own serial configuration software.

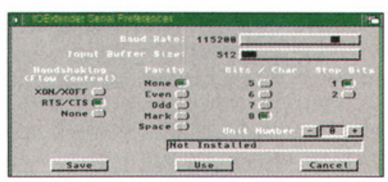
BIG BOX MISCELLANY

Since on this side of the pond, at least locally to me, the supply of *Amiga Format* is intermittent, perhaps you could email a reply as I may not see it in the magazine if that issue doesn't arrive. My questions are:

1. Can Siamese 2.5 use a SCSI network rather than a Ethernet card?
2. Was there, or is there, a 68040 or 68060 accelerator for A3000 or A4000 that had a Ethernet option rather than using a Zorro card?
3. How about the same with a graphics card option right at the accelerator (other than the PPC cards)?
4. Is there a Ethernet card that takes advantage of Zorro 3, not just Zorro 2?
5. What are the pros/cons/differences of the various Cyberstorm 68040 & 68060 cards for A3000/A4000? I most certainly



GVP's GUI utility can redirect printer output.



Sensible defaults for IOExtender serial connections.

Feedback

APOLLO 1200 FIX

One of the letters in the Workbench column in the Christmas 1999 issue was headed "Glitches", regarding problems Mark Cheetham was having with his Apollo accelerator.

Mark didn't mention what screen mode he was running his A1200 in, but the problem of random garbage on the Workbench screen was identical to what I experienced here when I updated from a DKB Cobra 030/40 up to an Apollo 1240/28, now running happily at 40MHz.

The random garbage on the screen only occurs with some Budgie revisions when operating in one of the DblPAL/DblNTSC screen modes. In 15kHz modes (including interlace) the garbage problem disappeared entirely on my machine. Only programs which make use of the blitter in 31kHz modes seem to have any problems.

Playing with MonED to alter the refresh rates of the Dbl modes does seem to have an effect, as does patching some of the system Blitter routines with fast 040/060 varieties; Aminet has a few such patches. The problem seems to arise from interaction of the "glue" logic on the Apollo board and the Blitter DMA when operating in the DBL screen modes. The most likely cause is that some Budgie and Gayle revisions aren't behaving themselves with regards to bus request and grant timing signals coming from the Apollo.

The fix that you mentioned for rev. 1D4 and 2B motherboards should cure his random lockup problem. I performed the mod on my machine and it is now rock solid. The A1240 draws nearly as much as the rest of the 1200 motherboard, not counting drives, and even more so if you overclock it and add the necessary CPU cooling fan. So he really should fit a 200W PC-style power supply.

Leslie Ayling
Australia

FBlit is one such Chip RAM economiser. Leslie also sent details of corrections for Budgie faults on some versions of the Amiga – these require precision soldering on the underside of the A1200 motherboard, so they're not for the faint-hearted, but I may explain them in the magazine if other readers express interest.

SINKING FEAT

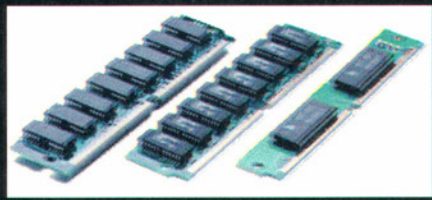
Regarding Dryden Cooper's "Wonky 68030" in the January 2000 AF, I had a DKB Cobra 030/40 and had the same problems. I noticed that the CPU was very hot to touch, even in a towered 1200, and added a heatsink which fixed the problem.

Before upgrading to an 040 I tried to clock up the 030. It would not run on a 45MHz crystal – 40MHz was my particular CPU's limit, although I was overclocking a 25MHz FPU at 50MHz without any problems.

Mike Mellendorf
USA

There's more to overclocking than just the CPU; it's equally likely that the other logic or RAM on your board was being pushed too far. 68882 FPUs are tolerant of overclocking up to 50 MHz, the official limit, but not beyond – you can clock them faster, and they won't complain, but you're likely to get wrong answers.

The AIBB Beachball test is a good way to check this graphically. My recent overclocking feature in AF explained the pros and cons of hot processors in exhaustive detail.



AFCDs advise on GVP's eccentric memory arrangements.

GVP MEETS PDF

I just got the January issue of Amiga Format and discovered that you had included excellent information on using standard SIMMs with GVP boards in: *AFCD48:-In_the_Mag-/Workbench/gvpsim64/*.

I couldn't resist combining the information into a PDF document. I hope this will be useful to your readers that want to look at just one document.

Sanford Hersh
Toronto

Thanks Sanford. I was a bit alarmed to see a 300K file amongst the Workbench emails forwarded to my home from AF. It's best to keep Workbench emails to plain text, as I'm paying BT national rates to collect messages at the moment (don't ask!). If you'd like to send anything over 64K, please send a short message first to explain why. CD stuff is best sent direct to EMC afcd@emcomp.demon.co.uk. Errol's got ISDN, but it's always good netiquette to ask before sending big mails or you might find they're bounced straight back! I've checked your file in APDF and it's readily readable on Amigas, though people who want printouts or have small screens or slow machines might be better off with the original files. Sanford's compilation is in the Workbench drawer on AFCD51, as GVP_Ram32bit.pdf.

want one with onboard SCSI (2 is fine) and DMA transfers.

Von Broadway
Saskatoon, Canada

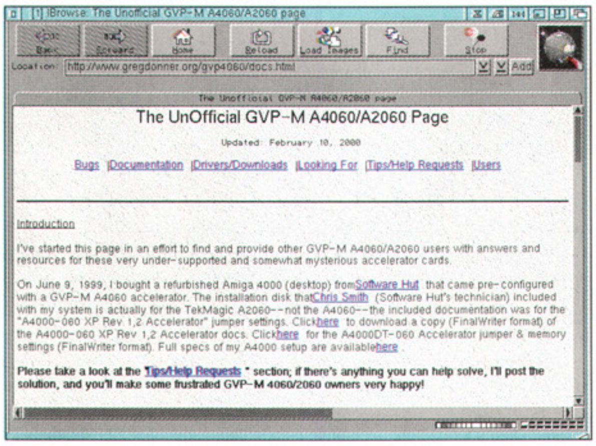
If you want to be sure of a copy of Amiga Format, anywhere in the world, get a subscription. The whole point of this column is to share answers with other readers that might have the same problem. It's not a UN aid programme. Subscriptions directly support the magazine, and are substantially cheaper than news-stand copies. People asking for personal replies, or sending long lists, are really asking to be put at the bottom of the pile.

Count yourself lucky…

The full version of the Siamese System can use SCSI for file transfers. Only the cheap version is restricted to serial ports. You need Ethernet to make it work nicely, and SCSI boosts large file transfers further.

I'm not aware of any Zorro 3 CPU card with Ethernet on-board or as a local option. This doesn't really make sense except for fast (100 megabit/s) networks, which are relatively recent arrivals. No-one has made such a card for Zorro 3 either (though it's possible) as limited demand could make it expensive. Zorro 2 is fine for standard 10 megabit Ethernet, but restricts higher rates.

The only Amiga board with 100 megabit support is Kato's unreleased Unity.



Greg Donner offers unofficial support for GVP 060 users.

The prototype of this works, but it's only Zorro 2 so a single Amiga can only handle a third of the possible traffic on the fast Ethernet. Unfortunately the first batch died at the PCB manufacturer, when an error in CAD format conversion caused shortcuts in the middle layers of the multi-layer board. Kato hope to start a new production run 'very soon'.

I've reviewed all three Cyberstorms, and bought the first two. None of them are available at the moment, but you can get new GVP060s, so perhaps that's the model to consider first. It's cheaper than the phase 5 boards, for a start. It also has the best SCSI 2 implementation, native English documentation, fast RAM access, and third-party support at http://www.gregdonner.org/gvp4060/gvp4060.html

If you're looking for a second-hand Cyberstorm board, or waiting for DCE to restart production of the wide-SCSI Mark 3, you certainly need to know the differences. The boards have little in common but the name and CPU chip, though they all support up to 128M in four local SIMM sockets, like the Warp Engine and GVP060.

The Cyberstorm 1 was originally a three-part 68040 accelerator. It's far too big to fit inside an A3000, as the memory and processor are on big daughterboards, and the SCSI is a fourth board, an optional extra. The 68060 model supplanted the 68040 carrier board with a low-voltage version holding the new processor.

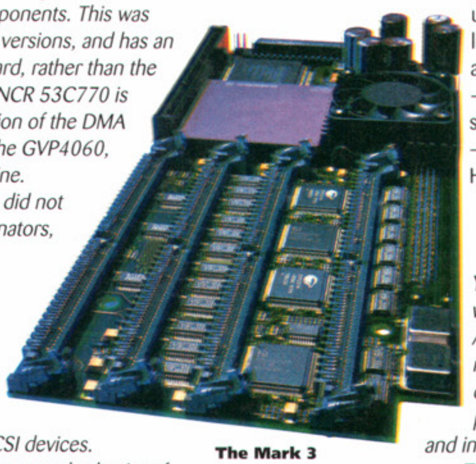
Memory configuration on the Mark 1 is complicated. You must juggle a mass of small jumpers to tell it the size of each SIMM in the four sockets. It doesn't like some 32M SIMMs, seeing only half their capacity. The SCSI interface uses a FAS216 chip, like the earlier Fastlane board, but the interface design is buggy and mine's never been usable, despite a firmware update and return to Germany for warranty repair. Other users report similar problems, though the accelerator itself works well.

The Mark 2 was a reworking for the

Continued overleaf ➡

68060 which merged the three main boards into one and fixes the optional SCSI interface. The chips are the same, but the new glue logic means it works reliably. The Mark 2 has slower memory access than other Cyberstorms, but this makes it tolerant of cheap SIMMs and allows automatic sizing, with no need of configuration jumpers. The main board fits in an A3000, but not the SCSI add-on.

The Mark 3 is a cut-down version of the CyberStormPPC, lacking the Power PC chip and support components. This was made in 040 and 060 versions, and has an NCR SCSI chip on-board, rather than the simpler FAS216. The NCR 53C770 is the 'Ultra SCSI 3' version of the DMA coprocessor used in the GVP4060, A4091 and Warp Engine. Unfortunately phase 5 did not ship it with wide terminators, standard SCSI 2 connectors, or the external adapter and terminator shipped with earlier CyberStorms, so it's more expensive to wire up to standard SCSI devices.



The Mark 3 is a cut-down version of the CyberStormPPC.

The Mark 3 requires matched pairs of SIMMs, as the logic is still present for the 64-bit PPC memory access. This makes it faster than the Mark 2 but less flexible than the GVP, which can use odd SIMMs or faster 'interleaved' access to pairs if you optimise its configuration.

The Cyberstorm Mark 3 is the only 68K processor board with optional daughterboard graphics – the CyberVision works with or without a Power PC. VillageTronic claimed they could do this the other way round, putting a PPC on their Picasso IV board, but it seems that was just hot air.

GENLOCK UPDATE

I've got a Genlock which worked fine on an A500 but when I plug it into the my 28 MHz Blizzard A1200/020 for some reason the picture on my monitor looked as though the system had completely crashed. Fearing that I had broken my computer I unplugged it. I did manage to get the lights on the Genlock to light up with and without an external power supply – an old Sega one fits just nicely, and saves loading the A1200 one further – but I couldn`t get it to do much else. Have you any idea what's wrong?

Chris Bradley
Cheltenham

You have run into a timing problem which particularly affects accelerated A1200s. The ubiquitous Red Skull reckons this can be fixed with a pull-down resistor, to sharpen up the fast pulses that synchronise the Amiga and incoming video.

To do this, connect a 470 Ohm resistor between pin 1 and pin 16 on the back of the 23 pin Video port. You might find this easier if you put the resistor inside the plug from the Genlock, but some have moulded plugs which can't easily be taken apart, and those almost certainly can't be reassembled afterwards! Pin 1 is XCLK, a key signal from which video timings are derived. It works as an input for Genlocks and an output to scan converters. Pin 16 is just the nearest ground line. The low value of pull-down resistor helps to speed up the positive to negative transitions of the external clock when you are using a Genlock. The majority of circuitry in the Amiga changes state on the positive to negative transition of the clock. The timing is probably not too critical when you are just using the 68EC020 on the main board which is synchronised into the system clock, but when you are dealing with an asynchronous state machine operating considerably faster then the motherboard clock, like the accelerator's glue logic, the transitions need to be much faster.

PCMCIA ETHERNETS

I have been thinking about networking my tower cased A1200, possibly with a Pervasive Contraption bought for DTV, using Siamese. I've never been keen to get a PC but networking would be a useful future option whichever way I go. I bought an angle adaptor with the case specifically for this purpose – so I read the feature in *AF132* with interest. The limitations of the A1200 PCMCIA slot for Ethernet cards have me worried.

You mention two ways round the reset problem. One was to remove and replace the card. Leaving aside the fact that I've always found the PCMCIA slot's pins a little fragile, the slot is now inside the case and so far from readily accessible.

Alternatively I could attach a thingy to the Gayle chip to add a proper reset signal (please excuse me for getting so technical). But my system has a Power Flyer EIDE interface which, amongst the various scary steps in its installation, needs a thingy fitted

NET REQUIREMENTS

I am a 50-year-old disabled computer novice contemplating getting onto the Internet to compensate for being house-bound but I am very confused as to how to go about it. My set-up is a Workbench 3 A1200 using Kickstart 39.106, with a Typhoon 2 68030/40 MHz Accelerator and 16M of Fast RAM, Fujitsu 1.7G hard disk and Power Computing CD-ROM.

I read 'Get into the Net' in AF 115 and note under the Hardware list in "What you need" that you mention a graphics card. Is this absolutely necessary as I am limited financially? I also note that most of the software appears to need Stefan Stuntz's MUI program to operate properly. Do I need to buy this as well?

Bob Chowdhury
Dunstable

You can go online and access most of the potential of the Internet with nothing but a TV, modem, free software, and an Amiga with extra RAM. MUI, graphics cards, and other extras just make the experience a bit quicker and prettier.

A graphics card is ideal for viewing pages made on PCs, as many frame-based sites assume at least 800 by 600 resolution, but this should change as TV-based browsing takes off. There will always be a few pages that are only viewable on the author's machine, but the major search engines and most Amiga sites work well in AGA. In fact even Ben used Super72 mode on a Microvitek monitor at AF until recently, when he took his own advice and stuffed a Zorro graphics card in his A4000.

MUI is essential for YAM, Voyager and IBrowse. These are excellent programs, especially if you've got a graphics card to take advantage of their configurable interfaces, but you can go online happily without MUI – the Internet software in the Workbench 3.5 pack includes the excellent AWeb, which does not use MUI, and there are ClassAct and GadTools-based programs to read FTP, email and news, too. MUI is shareware but usable without registration – like many others, I registered my copy painlessly online as that allows us to save custom settings.

I've been online for years with 'only' AGA, and get by well enough not to bother putting my Picasso 2+ board in this machine, though I have got a true multisync monitor and recently treated myself to a faster serial port. Before that I browsed happily with a 33.6 kilobaud modem on the standard serial port, and IBrowse displays in 64 colour VGA Productivity mode.

You've got ample computer resources for Internet access, though you might consider a faster serial port – Twister or SilverSurfer to keep your phone bills down, especially if you transfer text (news or email) while accessing the web, using more than 64 colours on your browser screen and modes that push out pixels at the top rate, like SuperHires, HiGfx, Super72 and DblPAL. A flicker fixer is a good way to halve the load on the custom chip set, leaving more time for motherboard access.

You can get by with a TV in PAL mode, but the limited resolution means a lot of scrolling up and down through Web pages. Multiscan suits cheap VGA monitors but is a bit narrow. Most pages fit nicely on a Super72 screen, if your monitor can sync to 22 kHz and you don't mind fast interlace. The HiGfx mode goes up to 1024 by 768 on a good monitor, but leaves little time for other custom chip usage in 256 colours, strangling 57,600 baud motherboard serial port access. Web browsers do a good job of substituting colours and fonts to use the resolution available – after all, HTML is designed to be hardware-independent.

The A1200 motherboard resources are adequate for Internet access – you won't have problems unless you set every option to its upper limit, and even those can be relieved with cheap add-ons that ease serial and video bottlenecks. If you've got a graphics card you'd be sorry to lose it, but the difference is essentially cosmetic, and a stock Amiga with cheap accelerator can readily juggle net applications when 'fast' PC users would be left to twiddle their thumbs, albeit with more colours and pixels to stare at in the meantime.

to the Gayle chip. I would like to know if these circumstances rule out PCMCIA Ethernet cards for me.

One thing worth noting is that the daughter board clamped over the Gayle chip has jumper pins that are connected to the reset button on the case which now reproduces the Ctrl-Amiga-Amiga effect rather more immediately and reliably than the actual keypress. Since this is a hardware reset I wonder if using this does anything to reproduce the missing signal. Or did fitting the Flyer and closing the tower case also seal those future options I was so keen to keep open?

Tim Ruffle
via UKonline

The adapter for the Power Flyer does not yet fix the PCMCIA reset; Power are waiting for an update from Elbox which should add this feature.

Meanwhile it is possible to make all three connections to fix the reset signal underneath the board, out of the way of the Gayle adapter – that's how Eyetech do it.

Power's Salvatore Stilo suggests: "The reader can solder the modification on top of the Gayle daughterboard, checking the correct pins. He probably needs a multimeter to verify where the pins end up on the other side of the board."

If you can trace the connections away from Gayle, you can put the components

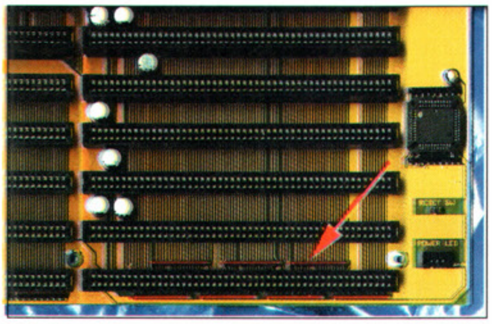


Is PCMCIA ethernet the way to go?

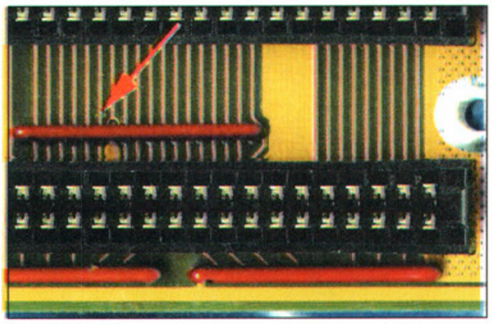
anywhere electronically connected to the relevant pins: 5, 20 and 40. Pin 5 is connected to the card slot, and pin 20 to the side of R715A nearest Gayle, so all you need is access to RST, the main Amiga reset, which is widely distributed. But if you're in any doubt, get Eyetech to do it, rather than risk damage to your board.

Once you've got a network you're more likely to leave the computers on, so the need to plug and unplug to reset a card might be reduced, unless you're addicted to buggy software! I share your concern about the fragile PCMCIA pins, but the lack of access is likely to cause more trouble.

Given that you're towered up and looking to spend quite a lot of money (DTV PCs are not cheap!) perhaps you should consider getting a Zorro 2 or Z4 backplane and an Ethernet card specifically made for the Amiga.



This is the problem connection on Elbox's A4000 Zorro 3 expansion.



Cut this trace and your A4091 should boot happily in any slot.

POWERPC PLANS

Just a few questions regarding the upcoming G3/4 cards. I've been thinking of getting one of these beasts for some time now, but I need some answers first:

1. Is there a graphics card planned for the AmiJoe, and if so, any details?
2. Are there any manufacturers out there planning to develop a full PCI backplane for either the phase5 or Met@box cards?
3. Are phase 5 still planning to make the G4 module for the mythical BoXeR?

Paul Laycock
via Yahoo

While I share your interest, it's hard to answer questions about products that don't even exist.

It's a bit rich to call the BoXeR mythical, when none of the other boards you're considering have been produced yet. At least we've seen a prototype of the BoXeR, made before Index were forced to rework it without access to Commodore chips – at the time of writing, phase 5 haven't even prototyped their boards yet, stymying the QNX partnership.

The G4 BoXeR module deal was conditional on the main board being made and sold in quantity – phase 5 agreed that they would then make a PPC add-on for it, though they're hardly reknowned for speed to market. AmiJoe has at least been sighted, but not working – the maker's plans have changed several times so it's too early to say if a graphics card will be made. I guess this too depends on the level of sales.

PCI is a feature of the BoXeR, designed in from the bottom up, but it has proven difficult to add to Commodore's Amiga design because it requires synchronous DMA and a relatively simple architecture – the Amiga expects more flexibility, with bits communicating freely while working at different rates.

There's no problem with putting PCI on a new CPU card – the required logic is available off the shelf, ready to program into gate arrays – but the software drivers are much trickier, especially as by the time a PCI board has peripheral support it might be no longer in production. PCI products are fixed-speed, so rapidly obsolescent.

ZORRO 3 DMA

I have the 7 slot Elbox revision 1.1 Zorro board, and can't get it to work with my A4091 SCSI controller board. No matter what slot I put it into, the Amiga refuses to boot. I am using it successfully with a Zorro 3 CyberVision64 (non-3D) board.

But even when I have no other boards in any other slot, everything halts when the A4091 is plugged in. I can't even get to the double mouse button screen.

I was wondering if there were any updates to this board or any hardware fixes to make it work with my board. I do have Buster 11.

Marcel DeVoe
USA

You are not the only one to have encountered this problem, and Elbox have come up with a fix. Apparently the termination of the _CCS signal on pin 74 of the Zorro 3 bus upsets some Buster chips, although Elbox wire it up the same way as Commodore did in the A3000.

To guarantee correct operation during DMA read cycles when the A4091 is bus master, you need to remove the termination on that signal. In the photos from Elbox an arrow indicates the line which connects the CCS/AS signal with the 220/330 Ohm ladder terminating it. Cutting this track in the spot indicated removes the termination, but it also stops DMA from the seventh slot.

If you do not reconnect the cut line to that slot, some cards will not work in this slot, but the A4091 works fine as it does not use the _CCS signal. Elbox say that their Zorro slots are only the ones for A4000s in which each of the seven slots supports all the Zorro 3 functions.

DMA and Quick Vector Interrupt lines are decoded for each socket, whereas rival boards use Commodore's original signals, so only three or four selected slots support the full Zorro 3 specification.

Simon Goodwin AF

GOT A QUERY?

Make sure you submit them correctly:

- **Send your emails to amformat@futurenet.co.uk with the subject "Workbench".**
- **Send letters to the usual *AF* address and make sure you put "Workbench" on the envelope.**
- **Include details about your machine, such as what processor and how much RAM it has.**
- **Please do your best to describe your problem succinctly.**
- **Make sure it wouldn't be easier to contact the dealer you bought the item from and ask them.**
- **Be concise!**

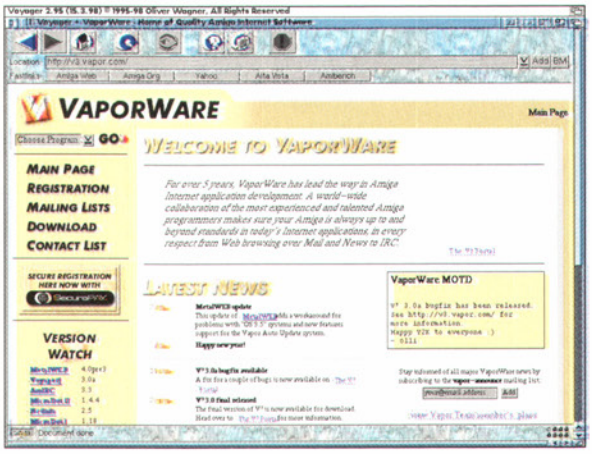
Amiga.net

In terms of Net software development, the Amiga often lags behind the PC and Mac – but this isn't always a bad thing

Ever since, as an ST owner, I first clapped eyes on my friend's A500, I have been a great fan of the Amiga. I remember wondering why on earth my machine couldn't match its beautiful hardware scrolling and amazingly high-quality audio capabilities. But I'm also a realist, and as someone who uses a PC every day, I'm also fully aware of the chinks in the Amiga's armour.

But when you consider that, for a large chunk of the last decade, the Amiga has been floating in an uncertain limbo, it's astonishing that the gap between what PC contemptibles can do and what Amigas can do isn't a great deal wider than it actually is.

If you've got an Amiga, and you're on the Internet, you can browse the web, send email, use IRC and ICQ, stream audio, listen to MP3 files, and a great deal more besides. In fact, you can do most of the things that PC users can do on the Internet, and virtually all of the things PC users can do that are actually worth doing.



Voyager 3 is now out, and it's the first Amiga browser to support Flash animations.

> *The fact that so many of these technologies never made it to the Amiga is no great loss; some of them were clearly never going to catch on*

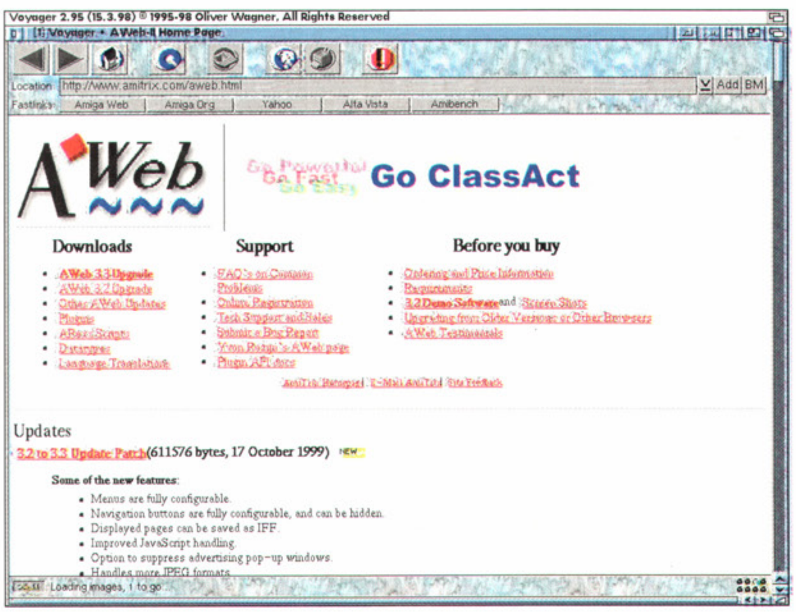
The problem, as well you'll know, unless you've been surfing with your eyes closed, is that the Internet is literally awash with hype. There's such a massive buzz surrounding the net these days that there is scarce refuge from it. In the short modern history of the Internet – which, for the sake of argument, we'll take as being the years from 1993, when Tim Berners-Lee invented the web, to the present – we've seen myriad new technologies appear, many of them hyped to increasingly ludicrous lengths.

Many have fallen by the wayside, becoming little more than entertaining footnotes in the story of the net. The fact that so many of these technologies never made it to the Amiga is no great loss; some of them were clearly never going to catch on – at the time, it was obvious to most of us that these were ideas which just couldn't have been properly thought through.

But Amiga owners don't get caught up in the hype the way that many folk in PC world do and people don't tend to create new software without thinking about what the practical applications of it would be.



IBrowse 2 is now available at last as well.



Like the other Amiga browsers, Aweb supports Javascript... well, usually.

CONTACT POINT

You can contact me with your comments, questions and suggestions at dave@cusick.co.uk or through my website at http://www.cusick.co.uk.

PUSH TECHNOLOGY

Back at the tail end of 1997, the talk everywhere was of Push technology. Companies such as Pointcast and Marimba promised that the Push technology solutions they were peddling would revolutionise the online world because people would no longer have to actively seek out information on the Internet. Their software was based on the idea that content providers could pump information out across the Internet and that individual computers could filter it down to present users with material that was directly of interest to them, on their desktop.

In PC land, where all it takes is some cunning spin-doctoring for a tin-pot start-up company to suddenly become worth millions of dollars and have an entire industry listening to its outlandish predictions for the future of the net, Push technology was suddenly everywhere. Netscape and Microsoft both incorporated support for Push technology (or "channels" as Microsoft, ever keen to rename established concepts and present them as



Mirabilis refused to port ICQ, so enterprising Amiga programmers did it for themselves.

its own creations, called the system) in the 4.0 versions of the PC and Mac browsers.

Of course, there were two fundamental flaws in the whole Push notion. Firstly, pumping huge amounts of information at people over the net, most of which their software will then discard straight away, is ridiculously wasteful of bandwidth. Network administrators the world over hated the idea of Push from the word go. Secondly, the net is, at present, an active experience, not a passive one. Using the net in the same way as television – the idea of just sitting down and absorbing whatever is on the channels that are beamed at us – is like trying to re-invent the wheel.

On the Amiga, nobody ever created a Push client. For a start, there was no point,

The key technologies in use today on the net have been, for the most part, skilfully ported to the Amiga

because Amigas aren't found in corporate settings like PCs and there can't be that many Amiga owners worldwide who have the permanent Internet connection for which Push was really designed. But more to the point, nobody in the Amiga programming community saw a need to recreate this fancy, but clearly useless, technology on their favourite machine.

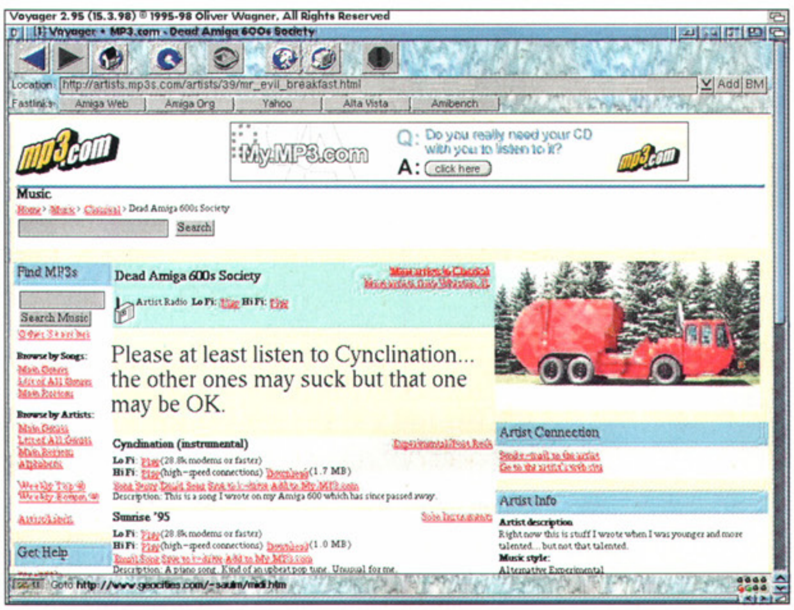
JAVA SCRIPT

To a lesser extent, the same thing happened with Java. When Sun originally unveiled Java, it was touted as the programming language of the future, a revolutionary technology which would pave the way for Network Computers. For a while, this might actually have happened, and several development teams began talking about producing a software which would enable Amigas to run Java applications. Indeed, in the very last issue of *AF*'s erstwhile competitors, I wondered whether the Amiga might have a future as a platform capable of running Java applications efficiently without enormous memory and processing power requirements. In the end though, Java's momentum seemed to peter out, as few programmers seemed capable of producing anything with it apart from pointless scrolling text animations and bandwidth-intensive real-time chat rooms.

On the other hand, the key technologies in use today on the net have been, for the most part, skilfully ported to the Amiga. When Mirabilis refused point blank to convert its hugely successful ICQ instant messaging system to the Amiga, resourceful programmers used publicly posted source code to construct their own Amiga ICQ clients. When the MP3 file format became popular in mid 1998, Amiga MP3 players and encoders soon became commonplace. When Javascript began changing the face of the web, the Amiga browsers made sure they supported it (eventually!) and now Shockwave Flash animations are commonplace, Voyager has added support for those too.

So yes, it's true that the Amiga can't do everything a PC can do on the Net; there isn't a direct Voyager, IBrowse or AWeb equivalent of every single PC browser plugin. Ultimately though, everything worth doing online can still be done on an Amiga.

Dave Cusick



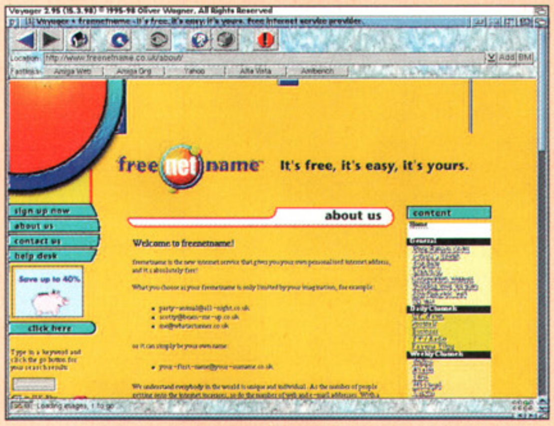
MP3 files pose no problem to Amiga owners either.

DOMAIN NAMES REVISITED

In issue 133, Amiga.net looked at registering domain names. Registering domain names is all the rage these days, with around 300,000 new domains being registered each week around the world.

Recently, the online auction house eBay accepted a $10m dollar bid for the Year2000.com – a lot of money for a company to pay for a domain which will be out of date in a few months! Fortunately however, as long as you can come up with a domain name that hasn't already been claimed, you won't have to pay anything like as much. The sites we looked at in the article were offering domains for around £40 for a couple of years, but as reader Peter Richards emailed me to point out, you don't even have to spend that much.

A company called Freenetname offers free Internet access and a free virtual server package to boot, so now you can have your own neatly-named patch of cyberspace without shelling out a penny. Go to www.freenetname.co.uk



The aptly named Freenetname is offering free net names.

WEBSITES OF INTEREST

Freenetname: http://www.freenetname.co.uk
Voyager 3: http://v3.vapor.com
AWeb II: http://www.amitrix.com/aweb.html
IBrowse 2: http://www.hisoft.co.uk/amigashop/ibrowse.html
StrICQ: http://owlnet.com/stricq/

Creative

The complete beginner's guide to... 3D basics

Modelling? Lighting? Animation? 3D is hard work to get into, we really need a beginner's guide...

Another *Amiga Format*, another Creative Section. And this time we have a more artistic bent.

3D modelling is a subject that readers have been crying out for tutorials on. So, just to prove that we do listen, not only do we have Ben giving the whole subject of 3D graphics the beginner's guide treatment, we also have the first in a new six-part tutorial on *Imagine*, one of the top Amiga rendering packages. This latter is by a new contributor to the pages of *Amiga Format*, Andy Kinsella.

In our other series, Neil vanquishes the cookie monster, Simon shows you how to perform magical tricks with your Amiga's blitter and copper, and I witter on about programming some more.

Spring is in the air, and, in the spirit of renewal, we shall by waving adieu to many of these series to make room for crisp, freshly-scented, new ones. I could tell you more now, but I think I'll leave you in suspense until next time...

Richard Drummond

CREATIVE INDEX

With a new tutorial starting this issue based around *Imagine*'s very capable modelling abilities, the one problem we found was that in order to achieve the results we wanted in a relatively small space, we had to ditch the basic explanations of how 3D packages work.

Unfortunately, if you don't already have some idea of how exactly changing a fractal noise texture on your surfaces is going to affect your model, or how to position lights so you can actually see something after you've spent twelve hours rendering your model, then it's all a bit of a waste of time. Now, we won't necessarily have the space to go into all these things either, so it's no use complaining if your favourite technique in *Cinema4D/Imagine/Tornado 3D* doesn't get covered – most of the things I'll talk about can be achieved in pretty much any 3D package worth its salt.

> *Most of the things I'll talk about can be achieved in pretty much any 3D package worth its salt*

3D PACKAGES

Before we start on specifics, you should know something about 3D packages on computers. Although the first commercial 3D package for the Amiga was *Sculpt 3D*, others pre-dated it, including an unusable version of *DKBTrace* ported from the PC.

The main problem with 3D packages is that they try to represent three dimensions on a two-dimensional medium – your monitor screen. This leads to plenty of methods of trying to make a usable interface. They've been based on a perspective view (like *Caligari*), separating the modeller from the layout part of the package (as in *Lightwave*), or just using a three view approach for the whole thing (as in *Imagine*). In any case, there are three letters of vital importance for any 3D package – being X, Y and Z.



TOP TIP

SPEEDING UP

Speeding up your rendering on an 040 or 060 is easiest if you get OxyPatcher. You can, in some instances, double the speed of your rendering. Not only that, but make sure you remove parts of your objects that'll never been seen when you render. There's no point modelling the interior of a house that'll only ever be seen from the outside.



Last issue's cover was generated with Lightwave 3D. To get the cartoony look, I left the ambient light up high, and depth of field was on to get the progressively blurred look.

TOP TIP
SCALING

Try to keep your objects to scale. It's not so easy in packages that don't offer feet or metres to play with, but you can always say that one "unit" = 1m. If all your objects are the same scale, you won't have any problems when you use them in different scenes.

These represent the axes to be used for representing 3D in 2D, namely width, height and depth, or, in *Imagine*'s case, width, depth and height.

While we instinctively understand three-dimensional objects and our brains are adept at "filling the gaps", computers have to be slavishly told about every single facet of an object. Again, while we find it easy to hold simple three-dimensional shapes in our heads, actually trying to describe them on-screen is never going to be any easy process.

While we instinctively understand 3D objects, computers have to be slavishly told about every single facet of an object

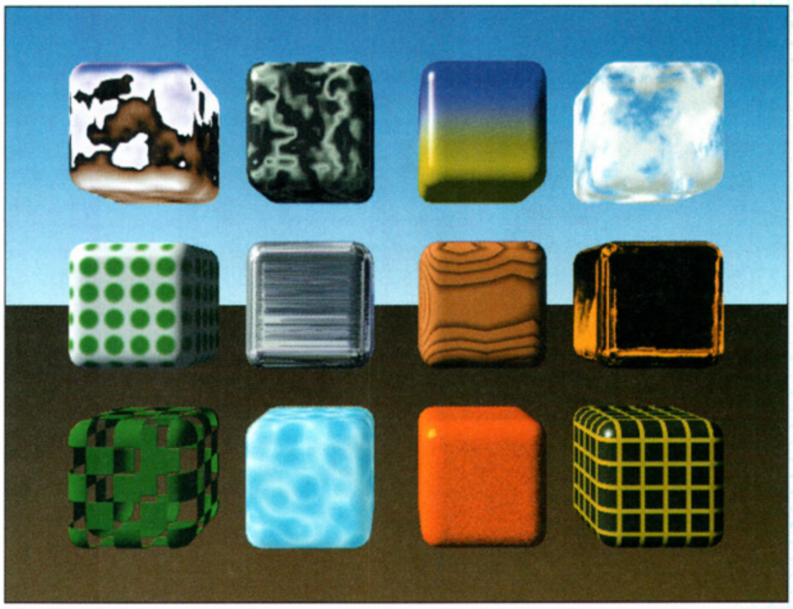
MODELLING

The next thing to talk about – and be warned, the 3D field is necessarily littered with jargon – is the basics of modelling. There are three main forms of modelling: CSG (Constructive Surface or Solid Geometry); triangular polygon; or multi-sided polygon. (There are more besides, but they are so uncommon on the Amiga to not be worth talking about in the limited space we have.)

The original *Real 3D* was the first only, *Lightwave* (on the Amiga) is the last only, but most have the ability to mix and match the first two styles, or the first and last. CSG is denoted by the fact that to create a model you are forced to use primitive shapes and Boolean operations (not sure what a Boolean operation is? Can't say I blame you – check the boxout of terms) in order to create more complex objects.

TOP TIP
REALISTIC LIGHTING

Movie buffs will notice that directors often add drama to a scene by making sure the people and objects in it are lit by a light that is obscured in some way. This is called a gobo, or cookie. It can be achieved by adding a clip map to a light, or positioning a simple cut-out object in front of it.



Algorithmic textures make for easy and very good-looking models, but nothing can compare to a finely-detailed bitmap for your final render.

Polygon-based modellers often rely on triangles, as is the case with *Imagine* most famously, but the only multi-sided polygon modeller on the Amiga to my knowledge is *Lightwave*. This allows you to create complex areas that are single polygons, but does introduce the problem of non-planar polygons. Non-planar polygons are a no-no because of the algorithmic methods used to render, more on which later.

RENDERING

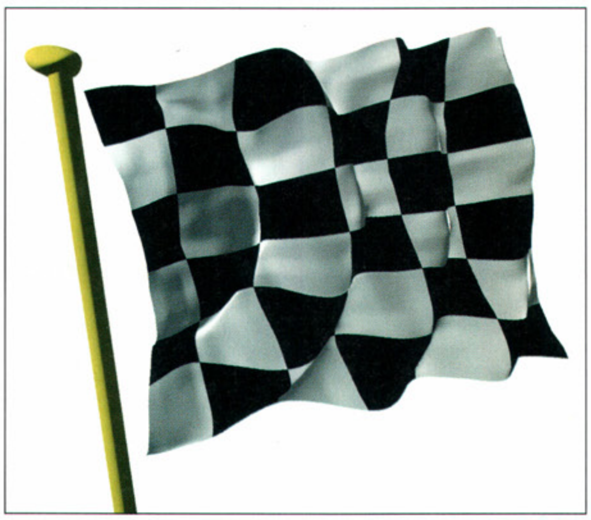
Once you've built your models, the time comes to position, texture and light them for rendering. This is usually seen as a less important part of 3D work than the modelling bit, but it is actually more important; while good texturing can disguise a poorly-made model, the best model can be made to look tacky because of poor texturing. Indeed, some models, like the MiG-29s used in *Goldeneye* (modelled and rendered in *Lightwave* on the Amiga, fact fans), are as simple as possible, because of the fact that they will be used in a very quick motion and at small sizes. Hence the number of polygons in the models are minimal – those in particular only consisted of 150 polygons each – but the texturing was more important, since the insignia had to be reproduced accurately. It's an extreme example, but one worth bearing in mind.

The truth of the matter is that you may well spend longer trying to get the right look for your model than you spent modelling it. Not all 3D packages have the

Continued overleaf ➡

TOP TIP
NAMING CONVENTIONS

If you are going to be using a lot of objects in a scene and they all have their own multiple texture names, it's best to name your textures accordingly. Try to use the <object_name.texture_name> format so you can easily recognise which object a texture belongs to.



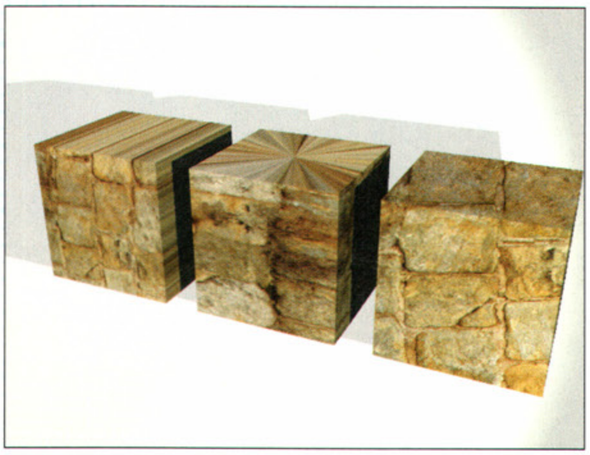
This flag uses two algorithmic textures for a displacement map. The flag alone has something like 10,000 polys to make it smooth.

TOP TIP
PERFECT SKIN

A good skin texture can be achieved by scanning the back of your hand and then desaturating the resulting image and whacking the contrast up. Don't forget to apply a bump map and mess with values of specularity and diffuse-ness as well.

TOP TIP
SEAMLESS

In packages like *Cinema 4D* that don't offer any kind of algorithmic texturing, try using *Art Effect 3* to create seamless image maps that repeat perfectly.



Getting the right type of image mapping is very important! From the left we have planar, cylindrical and cubic.

luxury of algorithmic textures as *Lightwave*, and, more impressively, *Imagine*. *Cinema 4D* for example, relies exclusively on bitmapped texturing, meaning that not only do you need to know how to build something, but also how to paint a realistic brushmap to be wrapped around your model. You might also want to create more than one map – one for bump-mapping your object, one for its colour map and another for the diffuse or specular mapping (again, all jargon explained elsewhere).

TEXTURES

In order to get a lot closer to true photo-realism you should use several different textures on each part of your object, rather than simply relying on one – a colour map, say. If you look at a real-world object, you'll see that it has several properties, its colour being just one of them. You may notice that light doesn't reflect in equal quantities across it, or that areas of it are bumpier than others. In order to duplicate this complexity, you often need to use multiple maps or textures. Start simple and just gradually add more texture layering until you get the effect you want.

When wrapping a bitmap around an object you need to know the best way to do it. Sometimes you can get away with flat mapping, at other times you want cylindrical mapping, but for most irregularly-shaped objects you'll need spherical mapping. For objects that use spherical mapping, you often need to watch out for stuff like seams appearing in your rendered version, where the bitmap wraps around and meets up.

Having a good image processing package like *Art Effect* or *ImageFX* is invaluable for manipulating the data so that the seams are less obvious, or best of all, invisible. They can also come in handy for simple solutions to seemingly insoluble problems. Say you have a dish and you want to have lettering running around the rim. You could do it with objects easily, but they take longer to render and could cause other problems. *Art Effect* has a tool called Polar Mosaic, that allows you to switch between Cartesian and polar coordinates – it basically wraps an image around a circle. You can use this effect to create text in a standard fashion and then use the polar mosaic function and map the resulting image flat onto the top of the plate.

Don't forget that you can also use the effect in reverse too for some weird stuff. When you get into 3D you'll quickly learn that you'll need to be familiar with two or three packages rather than just one...

> *If you look at a real-world object, you'll see that it has several properties, its colour being just one of them*

TOP TIP
BOOLEAN CUTTING

Cutting an object with another object is never an easy thing, but subdividing your two shapes first to give their facets more polygons makes for more accurate Boolean operations.



Using non-planar polygons will result in rendering errors like this. Converting everything to triangles will prevent it.

TOP TIP
MESSING WITH TEXTURES

The worst thing you can do with a texture that you're not sure of is to mess with more than one parameter at a time. If your software offers a preview of what a texture looks like in near-realtime, then you can afford to do so, but if you have a slower machine, or don't have that facility, take your time, be patient and you'll end up with a better-looking picture.



The default lighting looks great for logos, less so if you want a realistic look.

TOP TIP
LOW MEMORY SOLUTIONS

Not everyone has the memory available to be able to create really complex scenes but there's nothing to stop you modelling the background of your scene, rendering it and using it as a backdrop image for the middleground, rendering that and using the newly rendered image as a background for your foreground objects.

It takes a bit of forethought and precludes objects positioned in your scene from being in all three layers, but it can make for interesting images in its own right, especially if you fancy messing around with perspective...

LIGHTING

There really isn't the room to go into lighting in a big way (realistically, we could fill the whole of this issue talking about 3D techniques), just look at the pretty pictures which show different ways of lighting the same object, which only leaves rendering to talk about.

Even the topic of rendering could fill the mag. After all, rendering methods include Phong shading, Gouraud shading, ray tracing and radiosity before we even enter the different display modes used in modelling, or the (limited, on the Amiga) advantages of *OpenGL* and so on. Even so, there are plenty of things we can talk about.

The first thing to bear in mind is resolution. There's nothing to stop you from rendering at larger resolutions than you can display in 3D packages. This is



Turning off ambient lighting results in a better look, but this render requires more lighting...



A total of three lights (one to the left, one behind and high and a fill from the right) make this better.



Converting the one on the left to green and the one behind to purple gives an interesting effect.

very good for print, especially our Gallery section, but does introduce a possible problem when it comes to textures. That 64x64 repeating texture map may have looked fine when you were only rendering in low resolution, but it might look shabby when rendered page size!

Algorithmic textures don't have this problem, but you might need to recreate your bitmapped textures if you are going to render at different sizes. Also, when rendering, make sure you stick to a 24-bit format and if you are using JPEG, don't use any compression figure lower than 85%.

TOP TIP
AMBIENT LIGHT

Ambient light is bad. Turn it down as much as possible (if not off completely) for more realistic renders. Space scenes always need it turned off altogether.

TOP TIP
REFLECTIONS

To get that showroom look for a car render, position a large reflective rectangle above it, and then position lights around the car, pointing at the rectangle - just like they do in photo studios...

ANIMATION

Animation is another aspect of rendering. Some 3D packages aren't really as good at animating the models that you render in them – *Imagine* is one, whereas others, like *Lightwave*, seem made for animation. In any case, producing anything other than a standard IFF ANIM file is tricky without access to any other platform. For an IFF ANIM file, make sure you don't have more than about a quarter of the screen moving at any one time, lest you slow down playback of the anim, and add sound using AnimatED or Main Actor.

Writing a complete beginner's guide to 3D has been one of the hardest things I've had to do for a long time. I've probably skimmed over a lot of detail that you need, or you've been scared off by how complicated things seem, but don't get discouraged! Working in 3D, whatever the package, is great mental exercise, and it gives a real sense of pleasure to discover that though you thought you had not one artistic bone in your body, you are quite capable of creating beautiful images.

Ben Vost

TOP TIP
SHADOWS

Ray-traced shadows actually take less memory and time than shadow-mapped ones, but usually have hard edges (some packages allow soft shadows, but take a long time to render). Use an image processing package to blur the edges, rather than wasting time rendering.

JARGON

CSG
Constructive Solid (or Surface) Geometry is a way of describing simple solid models – cuboids, spheres and cones.

BOOLEAN
Boolean operations form the core of modelling operations when you don't have NURBS.

The simplest way of expressing the idea is to create two objects and to chop one out of the other (or add one to the other, or just take the overlap) to get the detail you want.

MAPPING METHODS
Bump mapping is used for algorithmically creating uneven surfaces rather than modelling each individual dent or lump. It doesn't affect the outline of a shape, which will mean that a silhouette of your object won't show any lumps on the profile.

Colour maps are what we recognise most easily; they provide the colour information used on your object – like the label on a beer bottle.

Diffuse mapping is a little harder to explain, but in essence, it is used to show the areas of an object that most light reflects from. A low diffuse value means that not much light is reflected back, a high value means most is, for a more saturated colour to an object.

Specular mapping determines how reflective a surface is – ideal for objects that are made of different materials.

NON-PLANAR POLYGONS
Triangles are always flat, which is why a lot of modellers use them, but polygons that consist of more points can easily be non-flat. As a real world example, take a playing card. You'll notice that it can be twisted. This is a no-no for 3D packages because of the fact that the renderers all rely on flat surfaces to be able to smooth accurately.

The solution, if you have non-flat polys is easy; simply subdivide them into triangles.

NURBS (NON-UNIFORM RATIONAL B-SPLINES)
These form the basis of modelling on some bits of software, though not on this platform.

They are a mathematical way of describing an object in simple terms – similar to CSG – but rather more flexible.

Lightwave on the Amiga offers NURBS for modelling, but finished models have to be frozen into polygons to be rendered. These models can often consist of many thousands of polygons.

Practical JavaScript

On the CD -In_the_Mag-/JavaScript

This final chapter of the series looks at compatibility and the proper use of cookies

Standards. I love 'em. There are so just many of them. JavaScript is one of them too, so you need to be aware of the different implementations to make sure that your web pages work on as many browsers as possible. Later versions of JavaScript not only added new features, they also changed the way some of the old ones worked. For example, delete () did one thing in 1.0, was deprecated in 1.1, but then returned in 1.2 with a different action (it's best to avoid this one). Other features, including == and some of the Date methods, vary between versions. The solution is to use the lowest version of JavaScript that supports all the functions you need, and specify that in the <SCRIPT> tag. For example, although == works differently in 1.1 and 1.2, it should always work in the correct way for whichever version you give in <SCRIPT>.

A more serious compatibility issue is the differing implementation of the same JavaScript version by browser manufacturers. The different approaches to case-sensitivity were covered in Part 1, but there can be other surprises. As with HTML, the only reliable option is to test your pages and scripts in as many different browsers as possible, and make sure the pages are still usable if JavaScript is not available.

ANYONE FOR COOKIES?

Cookies have something of a bad name. This has largely come about because people don't understand what they do, so they believe the worst of the scare stories. The same attitude gave comets the blame for anything that went wrong in the Middle Ages. A cookie is simply data storage, the server gives your browser a piece of information and the browser passes it back when you next visit the site. Since the information comes from the server, the cookie can't contain any information the server doesn't already have. It's like an environment variable, where a program stores your settings when it exits so it can use them again the next time you run it.

> Test your pages and scripts in as many browsers as possible and make sure the pages are still usable if JavaScript is not available

Cookies were originally intended for CGI scripts, but JavaScript can use them too. Here is an example that could be called from any part of a page's body text:

```
<script type="text/javascript"
language="JavaScript1.1">¶
<!–¶
function DateCookie()¶
{¶
   Cookies = document.cookie.split(';');¶

   for (var i = 0; i < Cookies.length; i++)¶
   {¶
        if (Cookies[i].indexOf('LastVisit=') == 0)¶
        {¶
                LastVisit =
unescape(Cookies[i].substring(10,
Cookies[i].length));¶
                break;¶
        }¶
   }¶

   if (LastVisit == 'undefined')¶
        document.write('This is
your first visit here.
Welcome!<br>');¶
   else¶
        document.write('Welcome
back, your last visit was on ' +
LastVisit + '<br>');¶

   document.cookie = 'LastVisit='
+ escape(Date());¶
}¶
// –>¶
</script>¶
```


For the purposes of clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.

All the cookies relating to a document are stored in the single property, document.cookie. They are stored in the form "name1=value1; name2=value2; ..." The first line of the function splits the list of cookies so that each name=value pair is stored as an array element. The for loop runs through the array looking for the one called LastVisit. If it finds it, the value is assigned to a variable and we use break to exit the loop.

Cookies may not contain spaces or non-alphanumeric characters. We use the JavaScript functions escape () and unescape () to translate to and from the standard URL encoding scheme, where a character with the hexadecimal ASCII code of XX is represented as %XX. We then test to see if the variable has been set up and displays the appropriate message. Finally, we resave the cookie with the current date and time.

When we set a value for document.cookie, it is added to the list of cookies for that page. If it already exists, it is updated.

When you first load this into a browser, you see the "Welcome" message. Reload and you see "Welcome back". But if you quit and restart your browser, you see the "Welcome" message again. What happened to the cookie? By default, cookies are transient. Session cookies exist only in the browser's memory and disappear when it exits. To create a persistent cookie, we give it an expiry date. Replace the last line with:

```
   Now = new Date();¶
   Exp = new Date(Now.getYear()
+ 1, Now.getMonth,
Now.getDate());¶
   document.cookie =
'LastVisit=' + escape(Now) +
';Expires=' + escape(Exp);¶
```

The first line creates a new object of type date. The Date () function has no arguments, so this is set to the current date and time. The next line specifies the year, month and day, taken from the current date with 1 added to the year; the cookie will expire one year from today. Then we add the expiry date to the cookie. Now you can quit the browser, even reboot, and the last date will still be remembered.

USING COOKIE DATA

So, we can tell a visitor when he was last here, that's hardly earth-shattering. Let's do something a bit more useful. First, we can add the facility for the page to address the visitor by name. We change the loop that reads the cookies so that it identifies each cookie in the list and stores each cookie in a variable:

```
    for (var i = 0; i < Cookies.length; i++)¶
    {¶
        CookieName =
Cookies[i].substring(0,Cookies[i].indexOf('='));¶
        CookieValue =
unescape(Cookies[i].substring(Cookies[i].indexOf('=
') + 1,Cookies[i].length));¶
        eval(CookieName + '="' + CookieValue +
'"');¶
    }¶
    SetCookie('LastVisit',Now);¶
```

This uses substring ( ) to split each Name=Value pair at the equals sign and eval ( ) to assign the value to a variable of the same name as the cookie. Then we update the value of the LastVisit cookie. To save calculating the full cookie string, including its expiry date, each time, we'll use this function to set cookie values:

```
function SetCookie(CookieName,CookieValue)
{¶
    document.cookie = CookieName + '=' +
escape(CookieValue) + ';Expires=' + escape(Exp);¶
}¶

    if (Name == 'undefined')¶
        Name = 'stranger';¶
```

This sets a substitute Name if the user doesn't want to give their own. We'll be using Name later on, so it needs a value:

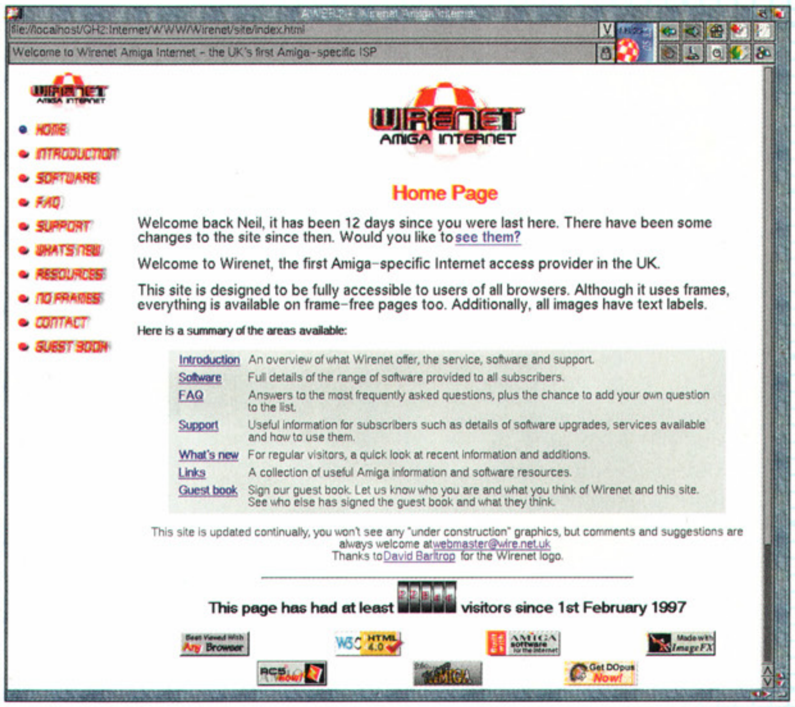
```
    if (LastVisit == 'undefined')¶
    {¶
        document.write('This is your first visit
here. Welcome!');¶
        document.write('<p><form name="NameForm"
onSubmit="SetName();return false">Please enter your
name here: <input type="text"
name="YourName"></form>');¶
    }¶
```

If it's the first visit, we write a one field form to the page for the visitor to give their name. The form calls this function to store the name in both a variable and a cookie:

```
function SetName()¶
{¶
    if (document.NameForm.YourName.value > '')¶
    {¶
        Name = document.NameForm.YourName.value;
        SetCookie('Name',Name);¶
    }¶
}¶
```

Now we can greet the user by name each time they call, but we can do more. We know when they last visited this page. We also know when it was last changed; it was one of the first things covered in Part 1. So we can compare the two and let the visitor know if there have been updates since he was last here:

```
    if (LastVisit == 'undefined')¶
    {¶
        // as above¶
    }¶
    else¶
    {¶
        document.write('Welcome back ' + Name + '.
');¶
        if (Date.parse(LastVisit) <
Date.parse(document.lastModified))¶
                document.write('This site has seen
some changes since you were last here on ' +
LastVisit + '. Click <a href="changes.html">here to
see them</a>.<p>');¶
```



What a difference a few lines of JavaScript makes! The site is now personalised to each individual visitor.

```
        else¶
document.write('There have been
no changes to this site since
your last visit.<p>');¶

        if (Name == 'stranger')¶
        {¶
document.write('You did not leave
your name last time you called. I
don\'t want to appear rude, so
can you please enter your name in
the box?');¶

document.write('<p><form
name="NameForm"
onSubmit="SetName();return
false">Please enter your name
here: <input type="text"
name="YourName"></form>');¶
        }¶
    }¶
```

A date is normally represented as a string of the form "Fri, 14 Jan 2000 13:58:55 GMT". We cannot compare two dates like this; "Fri, 13" would be considered less than "Thu, 12". Date.parse ( ) converts a date from its string representation into the number of milliseconds since 1st January 1970. The first "if" statement above compares the date of the last visit with the date this page last changed. If the last visit was earlier, it inserts an appropriate message along with a link to the page containing a list of changes.

For this to work, however, the page containing the script must be updated whenever you make any changes to the site. To alter the document.lastModified date, all you need to do is to upload this page to the server again. See name.html on the CD for the full script.

LIMITING THE NUMBER OF COOKIES

The RFCs give some limits on the number and size of cookies. You don't want a site filling your drive with them and slowing down your connection as they are transferred. The main limits to be aware of are that: a browser is only required to store twenty cookies per server (not per page); and that cookies should not exceed 4Kb in size. The twenty cookie limit could cause problems, so it is best to store multiple values in a single cookie. We could store the name and last visited date in a single cookie, "VisitData=Name|Date". To do this, use indexOf() to split it on the "|".

If you want to delete a cookie, set it with any value and an expiry date in the past. Here's a function to do it. However, browsers don't always clear out expired cookies immediately, so don't rely on this happening every time.

```
function DelCookie(CookieName)¶
{¶
    OldExp = new
Date(Now.getYear() - 1,
Now.getMonth, Now.getDate());¶
    document.cookie = CookieName +
'=xyz;Expires=' +
escape(OldExp);¶
}¶
```

You could also use a similar process to allow a user to choose between low and high bandwidth versions of your site the first time they connect. You can then automatically direct them to their choice on each subsequent visit.

I hope this series has given you a few ideas of your own; there are many ways to enhance your website with JavaScript.

Neil Bothwick

Just Imagine

Never the easiest of packages to use, Imagine has troubled many users in the past. Welcome to a new tutorial designed to fix that problem.

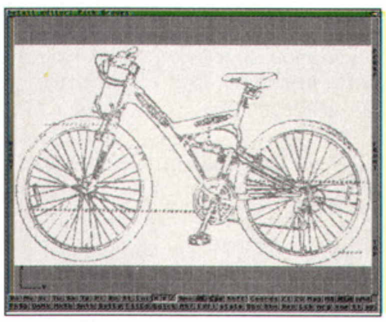
Some might say *Imagine* isn't the easiest 3D package to get to grips with – and they'd be right. The learning curve is indeed a bit steep, but once you've got down all the basics, found out where the power tools are and what they do, you will find it much easier going.

Over the next few issues we will be building a detailed model of a mountain bike. To do this, I acquired a photo, which I scanned and reduced in colour depth to use as a backdrop image in *Imagine*.

Let's start by launching *Imagine*. Switch to the Detail Editor. Keyboard short cuts will be dotted throughout the text in these [square brackets]. Let's get to it.

1 The first thing to do is make sure the views are centred and (View Reset) set the zoom factor to "4.0" and the grid to about "5.0". You're probably wondering why I made you zoom in before commencing the build. The quick answer is that it will slightly benefit render times (the long, technical answer will be revealed later).

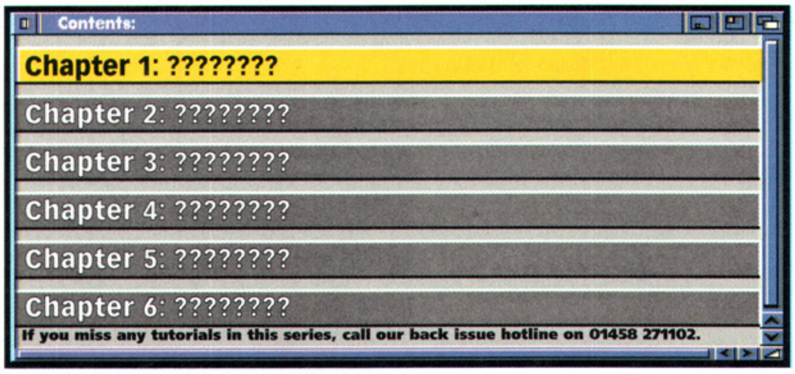
2 Make the "Right-View" full screen and load the image "bike_bg.iff" from your *AFCD* as a backdrop (View Backdrop » Load) so that you end up with a similar screen to that shown below.

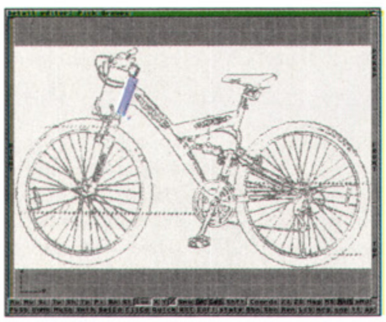


It helps if your backdrop images are the same width as Imagine's screen (640/800/1024), and as high, or less.

3 Add a Primitive Tube [F5]. Make "Radius=2.0", "Height=15.0", turn off "stagger points" and accept any other settings at default. Click OK. This tube will form the front-most part of the frame – the bit that the the forks and handle-bar-stem plug into.

Using the backdrop image as a guide, move the tube [m] over to the aforementioned section of the frame. Position the tube's axis at the base and centre of said section where the forks enter. Rotate [r] the tube in its X-axis [x] until it aligns correctly with the backdrop – "21.6°" in this case. It might be easier to use the Transform Requester [RA t] by checking "align" and entering the exact value for X. Confused? Take a look at our next picture. You'll notice that the tube is just a fraction too wide and short. It doesn't really matter as it's good enough at this stage (but feel free to scale it down a touch, if you like).



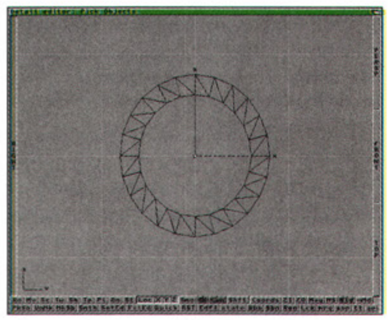


The tube is a little too wide and short.

4 The next part to build is the crank-housing. This is another tubular section, but we are not using a primitive tube. Add a primitive disc with a radius of "4.0". Leave # sections at 24 (you could use fewer sections, but I plan to render the final model fairly large and fewer sections would mean flatspots at large sizes).

Rotate the disc 90° in Z so that it lies face-on in the right view. With the disc still selected, go into Pick Points Mode [RA 3]. Select the central point of the disc and delete it.

Go back to Pick Object (or group) Mode [RA 1/2]. Copy then paste the object [RA c/p] so that you have two discs. The newly pasted one should be active. The new disc needs to have a radius of 3.0. Use Transform to make its X and Z sizes just so. We will use these two discs to create a ring. Select both discs by "Shift Clicking" on their axes. Go to the object menu and select Skin. Click the TOP gadget on the right side of your screen. The Top View is where we do the next bit.



The result of your skinning. This will help make a tube with thick walls.

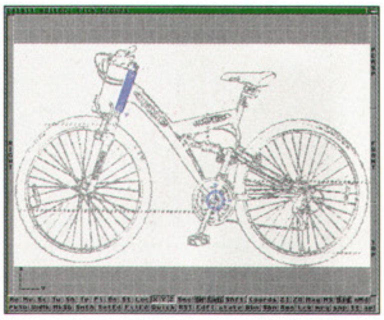
Now to make this skinned object into a nice, thick-walled tube. Extrude it by a length of 10.0. Simple enough. Something isn't quite right, though. The Tube is off centre a way. Use Transform to "Translate (move)" the object 5.0 units in X. Sorted.

Don't forget that we'll need sharp edges for our tube, so go into Pick Edges Mode [RA 4] and open Edge Filter from the Pick Menu. Accept defaults.

Note that the outer and inner edges of the object have been selected. Select "Make Sharp Edges" from the Function » Make Menu. *Imagine* will no longer attempt to smooth those edges.

Go back into the right-view and set zoom to 4.0, re-load the backdrop. Move the crank-housing to its rightful position over the image.

5 The next part to build is the diagonal box-section which forms the bulk of the frame. Take a look at the background picture. Notice the slight curve, and the taper as it makes its way down to the crank



Now we're getting there: crank housing and header are on our model.

housing. Hard to build? No way!

Go into the front view. Add a primitive disc. Accept the defaults. We have to do is shear away a few of the points so that we end up with just the top left quarter of the disc. Go into Pick Points Mode and delete all the points on the right and bottom half of the disc's axis (+X and -Z).

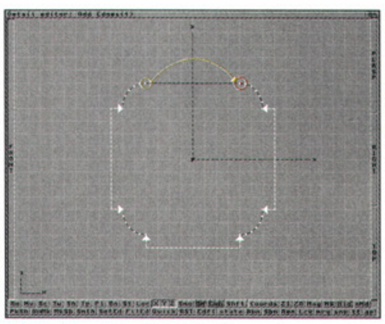
The cross-section of the frame is rectangular, with nice rounded corners, so we need to model just such a rectangle. Still in Points mode, select all the objects points [RA A] and scale [s] them down to 0.20 in all axes.

Go back to Object or Group Mode. Make sure the disc quarter is still pick-selected, Copy then Paste it. The newly pasted object is automatically selected. We need to "mirror" the pasted object. Use the Transform Requester to SCALE the object in X by -1.0 (minus one) – that's how *Imagine* mirrors. The object is now on the right side of your front view.

Redraw the view. Shift-select both disc quarters and join [RA j] them to make a single object. Repeat the copy/paste/mirror process for the joined object, but make the SCALE axis Z -1.0 rather than X. Join the two objects. That gives a single object which makes up the four corners of what will be the starting point of the box section. The corners need stitching into continuous edges first.

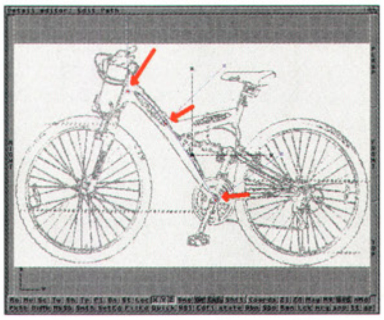
Go into Add Edges [RA 4] and fill in the gaps. These have been clearly marked below. How easy can it get?

Our rectangular object is a little bit, erm, square. A bit on the large side it is, too. It needs be slightly narrower than that tube at the front of the frame. Re-size the object to 2.8 in X and 6.0 in Z via the Transform Requester. While you're at it, change its position to -28.0 in Y and 25.0 in Z. It's now just inside that front tube,



Click the point circled yellow, then on the point circled red to create a new edge. Do the same for the other three gaps.

right where the box section starts on the backdrop image. Lovely. Now might be a good time to select all the objects, group them [RA g] and save. Just in case.



You might want to experiment with a couple more points on this path...

6 How do we get that nice tapering curve of the box-section? 3D modellers do it with splines. We extrude this shape along a path, that's how. Building and shaping the path goes like this:

Make your way to the Object Menu and Add an Open Path. Hit [F1] to pick-select it. Select Edit Path from the Mode Menu. You now have a couple of points at the ends of the path that you can monkey about with. Select the left-most point and position it at the same point as the rectangle you made earlier. (Y -28.0, Z 25.0: Use the Transform requester to be accurate if need be). Now for the right-most point. Position it in the centre of the crank-housing (Y 9.5, Z-18.0). The path isn't quite the shape we need, but it will be in a few moments.

With the right point still active, rotate [r] it 57° in X only [x]. Use the Transform Requester to align it if you struggle to get it with the mouse.

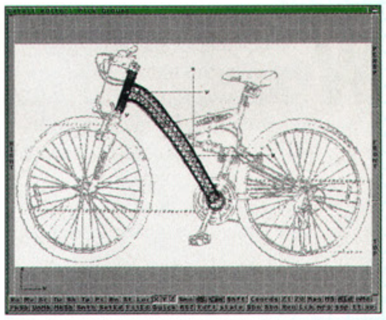
The curve still isn't quite right. Adding another control point to the path will give a bit more control. To do this, select the left point, then select Fracture from the Object Menu. A new point has appeared in the centre of the path. Select the point, hit [m] and drag it about a bit. It gives you much more control over the path's shape. Move the point to -10.5 in Y and 11.5 in Z (you know which requester to use by now!). Rotate the point to -48.3 in X to even out the curve. Before we do the next step, select the small rectangular section, and save it to disk. Call it "Y-section.iob".

Now for the bit that makes all that path editing lark worth the effort. Still with the rectangle selected. In the Extrude Requester: Check "Along Path"; then check "Align Y to path"; Make the number of sections 24, and set z-scaling to 0.7. Hit the magic button. The rectangular object is smoothly extruded along that path. Great!

To see why "Align Y to Path" was needed, undo, and repeat the process with it unchecked. Now you know. Undo, and repeat with "Align to Y" checked. The number of sections can be increased or decreased depending on how smooth the resulting curve needs to be. Scaling in Z causes the object to taper. Pic 8 shows the newly extruded object. Good, eh?

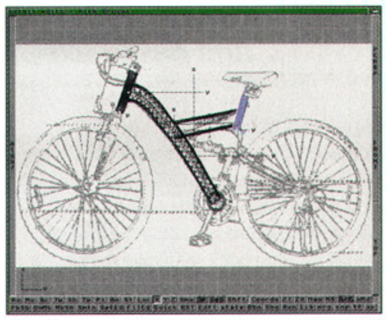
FACELIFT

If you aren't subscribed to the *Imagine* ACUP (Amiga Content Upgrade Program), you'll notice the screen grabs don't exactly look like the *Imagine* you're using. Don't worry, I'm not using any tools that are specific to the current release (5.17 at the time of writing). To find out more about the ACUP and the current status of Imagine for the Amiga – go to: http://www.cadtech.demon.co.uk



Your freshly extruded frame will look very groovy indeed.

7 Load the previously saved "Y-section" object. We will use this to create the part that sprouts out of the box section to create a Y shape (an on-its-side Y). Scale the object by 0.65 in X, and Position the object like so (with Transform req') X="0.0" Y="-8.50" Z="10.0". Extrude with the following: 28.0 for length, 0.9 for z-scaling, and 5.0 for z-translate. (Using Translate, rather than rotating the extruded object in X means that the object-ends remain in a vertical plane, which is how we need them.)



Now we also have a top bar and seat post socket on our frame.

8 Select the Front Tube. Copy, then paste it. Move the newly-pasted tube over to the rightmost end of the Y section. This will form the seat-post-socket. You can see the corresponding component in the backdrop image. Scale the tube to about 0.8, and rotate it in X a until it matches the image.

I think I'd better wrap it up here for this part. It's taken me a fair few words to get this far; many more than I thought it would, as a matter of fact.

Part two should be a bit more fun. We'll be building the back-end of the frame, and that nice bit of suspension you can see in the backdrop. See you there!

Andy Kinsella

Program Perfection

On the CD -In_the_Mag-/Program_Perfection

Our series takes us into the world of datatypes to get colours remapped to the screen they're running on

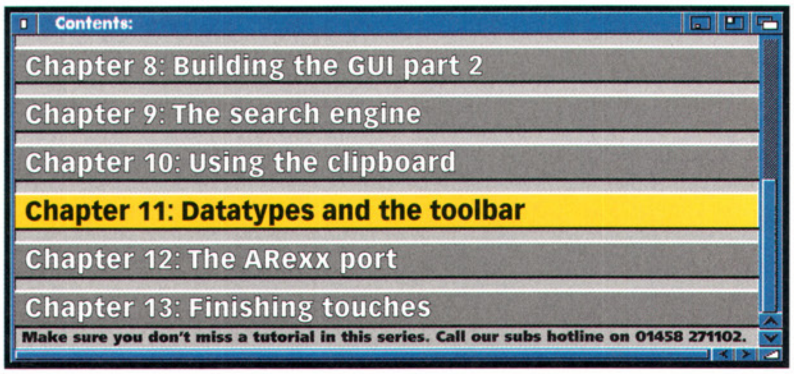
When Ben and I were initially discussing this tutorial series almost a year ago, Ben said: "Make sure you cover datatypes; I'm fed up with seeing software with graphics that don't get their colours remapped to the screen they're running on". Hmmm. "Valid point," I thought, "but how do I bring the subject of datatypes into the AFMore project?" Obvious uses of bitmapped images in a text viewer would be something like a splash window or a graphical toolbar. I wasn't particularly keen on either, but the latter seemed the most interesting.

A toolbar is a device immediately familiar to users of programs such as *GoldED, Voyager* or *YAM*. It is a strip of (usually) graphical buttons to allow easy access of a program's most common functions. For instance, in a text viewer, we could have one button to load in a new file, one to copy selected text to the clipboard and another to bring up the search requester. We could implement these buttons as standard BOOPSI button gadgets, but there are three problems to be solved: how to simply lay out the gadgets in a strip; how to store the bitmap data for the images; and how to incorporate those images inside the buttons.

The advantages of the datatypes system are many; it is highly modular and easily extensible

Ignoring the first problem for the moment, let us consider the images and assume that each image is stored separately in some standard file format on disk. We have to find some way of generating a bitmap of each image in memory and a way of drawing that bitmap inside a gadget. Unfortunately, the standard BOOPSI image class doesn't even support bitmaps, let alone the loading of bitmaps from disk files.

Nevertheless, let's just suppose for now that we restricted the images to being stored in IFF ILBM format. We could then use the iffparse.library (which we discussed last issue) to process the files and manually build bitmaps in memory. But that would still be far too much like hard work. A much easier and more flexible method would be to use datatypes.



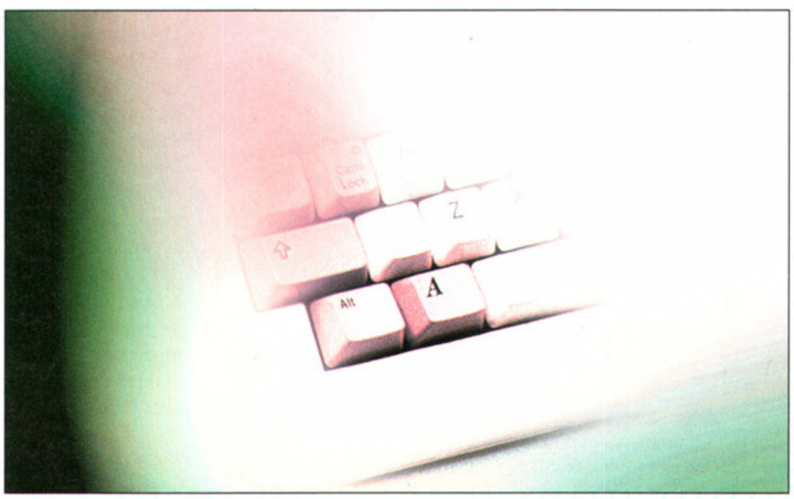
A TAXONOMY FOR DATA

Datatypes were introduced into AmigaOS with OS3.0 and are perhaps one of the most undervalued features of the operating system. The datatypes system provides a consistent, object-oriented interface for accessing and manipulating blocks of data of various kinds. These "kinds" of data are divided into classes and sub-classes. Classes are basic types such as text, picture, sound and animation. Sub-classes are specific formats of each class. For example, ILBM, JPEG and GIF are sub-classes of the picture class, while ASCII and FTXT are sub-classes of the text class.

The advantages of the datatypes system are many; it is highly modular and easily extensible. The datatypes interface makes the mechanics of processing the various types of data transparent to the client. Each class and sub-class is implemented as a shared library which is loaded on demand by the application. Once a program knows how to use one datatype class, it automatically knows how to use any sub-classes of that class that may be implemented in the future. Datatypes also support the conversion of data between sub-classes of the same basic class.

The datatypes system is based upon BOOPSI. In fact, the root datatype class is a child of the BOOPSI gadget class. Datatype objects are thus created and manipulated in a manner similar to BOOPSI gadgets and inherit many of the gadget class methods and attributes. The datatypes.library provides an interface for sending messages to a datatypes object which is equivalent to the BOOPSI functions within Intuition.

You create an object with a call to `NewDTObject ( )`, specifying any data source and initial attributes of the object as parameters. However, the difference between creating a datatypes object and a normal BOOPSI object is that here you do not have to specify the class of the object: if you supply a data source, which may be a file, the system clipboard or a block of



memory, then the type of that data will be automatically identified and an object of the appropriate sub-class will be created.

Alternatively, if you want only want an object of a specific class, you can specify this with DTA_GroupID attribute. For example, if you want to make sure that a file really is an image, you can ask for an object of picture class. If it's not of that class, the function will fail.

Since a datatypes object is in essence a gadget, it can be attached to a window in the same way as a gadget. You specify its position and dimension with the same attributes as a gadgets, connect it to other BOOPSI gadgets via the notification mechanism and report events to your window's message port.

The picture class presents all image formats as if they were IFF images. For example, you can query attributes to obtain an image's bitmap header (and so its dimensions and depth), bitmap and palette. For palette-mapped images, the datatypes

> *Since a datatypes object is in essence a gadget, it can be attached to a window in the same way as a gadget*

class can automatically remap the image to the palette of the screen that it will be rendered on. You do this by specifying `PDTA_Remap` as an initial parameter and invoking the object's layout method. This method is called for you, when you add a datatype object to a window.

When a datatype object is being used as a window gadget, it will generate notification messages due to any changes of its state. For example, remapping the palette of a picture object is off-loaded onto a separate task. When this processing starts, the object will broadcast a message containing the `DTA_BUSY` attribute. You might react on this to block user input to your window and put up a busy pointer. Similarly, when the object's visual state needs refreshing, it will broadcast a `DTA_SYNC` message. You should react to this with a call to `RefreshDTObject ( )`.

The datatypes system is extremely versatile but sadly not well documented. Unfortunately, we do not have the space to go into more detail here. An example is provided on the coverdisk, which demonstrates some of the ideas we have discussed above. For more information, see the autodocs and the examples provided on the Amiga Developer CD.

IMAGE IS EVERYTHING

As well as acting as a gadget, a datatype object can be used to draw directly into a window's rastport. In this case, the layout method is invoked with an `ObtainDTDrawInfo ( )` call and the rendering with `DrawDTObject ( )`. This is still not of much use for us. Okay, so we now know how to generate a bitmap from an arbitrary image file, but how do we install that image

Equivalence relations

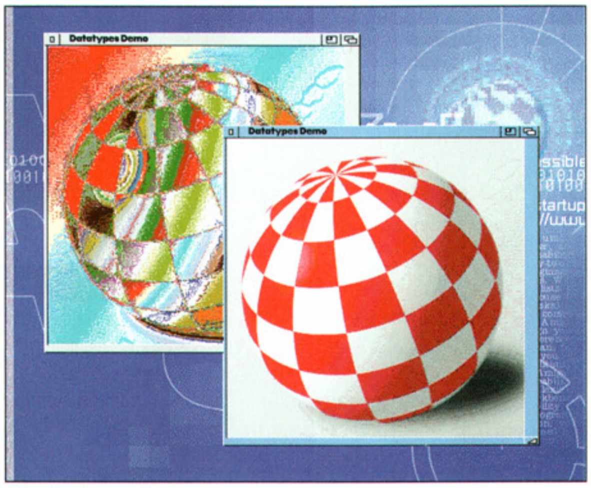
The interface for manipulating datatype objects mirrors that for manipulating BOOPSI gadgets and images.

Intuition	Datatypes
NewObject ( )	NewDTObject ( )
DisposeObject ( )	DisposeDTObject ( )
GetAttr ( )	GetDTAttrs ( )
SetAttrs ( )	GetDTAttrs ( )
DoMethod ( )	DoDTMethod ( )
AddGadget ( )	AddDTObject ( )
RemoveGadget ( )	RemoveDTObject ( )
RefreshGadgets ( )	RefreshDTObject ( )
DrawImageState ( )	DrawDTObject ( )
GetScreenDrawInfo ( )	ObtainDTDrawInfo ( )
FreeScreenDrawInfo ( )	ReleaseDTDrawInfo ( )

inside a standard BOOPSI button gadget?

The answer is to create a wrapper around the above drawing capability of the datatypes system, to package up the picture datatype as a BOOPSI image class. Thus, when receiving an `IM_DRAW` method, an object of this new class will draw its bitmap using the `DrawDTObject ( )` function.

We could implement such a class ourselves – it would be fairly easy to accomplish – but, as always, we are looking for the laziest possible solution. Reaction (or ClassAct) provides a bitmap image class



The datatypes class remaps the image to the palette of the screen.

which provides exactly the sort of thing we are looking for.

We can feel justified in our laziness, however, because the Rection bitmap class has many features which make it ideal for creating images for buttons. You can specify two bitmaps (from separate files) to be used within one image object, one as the normal button image, one as the selected image. If the size the image object's hit box is larger than a bitmap, then that bitmap will be centred within that box. And it supports transparency, if the corresponding datatype supports transparency.

STRIP-TEASE

We are almost there. The effort of laying out the individual buttons of the toolbar is not much of problem. We could create and position each gadget separately. It would be a tedious but not difficult task. A more elegant method is to use Reaction's SpeedBar class. This neatly packages up the creation and positioning of buttons into a single compound object.

In fact, the Speedbar buttons themselves are encapsulated within the class. You have to create and manipulate them only with the functions provided. You then attach these buttons to a standard Exec list and pass them to the Speedbar button as an initial parameter. Buttons are ordered according to their priority in the list – the higher the priority, the closer to the start of the list (left hand side or top of the button strip) the button is. Each speedbar button made be assigned an image and an optional selected image. **Buttons may be standard push buttons or toggle buttons, they can be disabled individually and can be part a mutual exclusion group (that is only one toggle button in a group can be depressed at a time).**

The Speedbar class also allows the dynamic addition and removal of buttons to a strip. See the Speedbar autodoc and include header for further details.

One of the problems with Reaction is the lack of tutorial material and example code showing how to use its features. Hence, I've put together a quick demo to show how to add a SpeedBar gadget to your programs. Using it in AFMore will not involve much more work than this. I only started examining the SpeedBar class when writing this article and I have to have to confess that I'm not too impressed with it. It does seems rather visually unappealing when compared next to its MUI counterpart. For example, Reaction SpeedBar buttons do not support both graphical images and text labels simultaneously.

The layout process appears none too smart, either, sometimes resulting in windows too small to show the complete strip of buttons. And when this does happen there's no visual clue to show that more buttons exist 'off screen'. This is an area of Reaction that needs more work.

Richard Drummond

COMPILER GLUE

The Speedbar example provided on the coverdisk makes use of Reaction, the updated version of the ClassAct GUI set which is shipped with OS3.5. To compile this example you need the OS3.5 Native Developer Kit from version 2.1 of the Amiga Developer CD. However, the NDK doesn't support the VBCC compiler that well, so I supplied the necessary bits and bobs to get it working. You'll find updated versions of the necessary link libraries (including an updated auto.lib to support auto-opening of the Reaction classes and the new OS3.5 libraries) and updated inline header files.

Banging the Metal

On the CD -In_the_Mag-/Banging_The_Metal

Our ultimate chapter leaves the Copper programming the Blitter to program the Copper to program the Blitter

Last issue I introduced custom chip code that generates new Amiga video modes to give classic computer displays without encumbering the main processor. Now I'll explain the Copper Compiler and how to customise the new modes. There are notes on the CD and all the required programs to roll dozens of your own modes. The Copper List compiler has been improved to allocate the last 128K on 2M chip RAM systems that put Qdos entirely into fast RAM; you no longer need the slow 'Chip only' version of the emulator on some systems. And with 50Hz font animation it gives a more interesting display.

For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.

Contents:

If you've missed any tutorials in this series, call our back issue hotline on 01458 271102.

THE THREE BLITS

The Copper List instructions set the screen up and perform up to three sets of blitter operations. Listing 1 programs the first set, which reads 8-bit character codes and puts them into the copper list instructions that render each character. The code reads words on channel A, masks out even and odd bytes with a constant in channel C, and multiplies them by 32. The Blitter modulo on channel A is zero. The modulo on channel D is 18. Each character blit uses five 32-bit Copper instructions. The code set up by Listing 2 expands the font from bytes to 16 bit words. The source modulo is again zero, and the destination modulo is 2. Listing 3 sets up the Blitter to render each pair of characters. The source modulos are zero. The destination modulo is two less than the line length.

Example Listing 1 – CHARS_TO_CLIST

```
DEFine PROCedure CHARS_TO_CLIST(a,c) ¶
REMark Expand C character code bytes from A to
Copper List ¶
IF ShowTime THEN MOVE #112 TO COLOUR0 :REMark
Start pass 1 ¶
MOVE #HEX("1FE0") TO BLTCDAT :REMark Mask for
CharCode *32 ¶
MOVE #HEX("39A0") TO BLTCON0 :REMark D:= (A>>3)
& Constant ¶
MOVE #0 TO BLTCON1 :REMark Ascending pass ¶
MOVE #-1 TO BLTFWM :MOVE #-1 TO BLTLWM:REMark
Use all bits ¶
MOVE #0 TO BLTAMOD :MOVE #18 TO BLTDMOD:REMark
Set modulos ¶
MOVE #a TO BLTAPTL :MOVE #0 TO BLTDPTL ¶
FirstCharMove=copper-2 :REMark Location to be
POKEd later ¶
MOVE #1024 TO DMACON_W :REMark Don't get Nasty
(yet) ¶
MOVE #c*32+1 TO BLTSIZE : WAIT 0,0 ¶
IF ShowTime THEN MOVE #60 TO COLOUR0 ¶
MOVE #2 TO BLTCON1 :REMark DESCENDING pass ¶
MOVE #HEX("59A0") TO BLTCON0 ¶
MOVE #a+c-2 TO BLTAPTL :MOVE #0 TO BLTDPTL ¶
LastCharMove=copper-2 :REMark Last Copper B
pointer ¶
MOVE #c*32+1 TO BLTSIZE : WAIT 0,0 :REMark Wait
till done ¶
END DEFine CHARS_TO_CLIST ¶
```

This procedure translates character codes into offsets for the Blitter to use later

TIME IS TIGHT

The timing of character pattern blits is tight; we're copying tens of thousands of patterns per second. To reserve time we put a plain bitmap at the top of the screen, above the character rectangle, for titles or controls. Updates must always be ahead of the beam.

We do this in low resolution modes, with 32 or 40 characters per line. The coloured copper stripes in the background show blitter activity as a proportion of display beam time. The green and blue stripes indicate when 8-bit character codes are loaded into the 32-bit Copper list. They may disappear off the top border if you use overscan. To see them: `LOAD flp1_CharMode40x30_bas`, `change CharLines% to 28 on program line 230`, and RUN. Experiment. If you go too low for the Original Chip Set to cope, you're asked to 'add HeadLines'. Adjust line 230 to give enough lines for a PAL display by adding bitplane lines above the character grid.

Red and purple stripes show when the 256 character font is being unpacked from bytes to 16-bit Copper data format. This is classic blitter technique; we need to step through the data twice, for odd and even bytes. To avoid resetting the blitter pointers half way, we do the first half in ascending order, and send the blitter backwards from the point it reached, to extract the rest – "Less code means fewer bugs", as ESA and Aminet developer Hans Guijt sagely puts it.

The dark blue background accompanies the heavy work, blitting character patterns from the unpacked font to the display bitplane. The blitter must finish updating the last line of symbols before the beam reaches it; all the timing works backwards from this point, to ensure flicker-free updates without double-buffering.

SCROLLY DEMO

The CharMode40x30_bas generates a grid using font animation by redefining character zero through eight cross-hair patterns. Other characters float above this. Windows are updated at the top and bottom of the screen, at 20,000 characters per second. The processor just writes the character codes, and eight bytes every 20ms for the grid. Even if the blitter was running all the time, taking three quarters of the chip ram cycles, this could be done in less than a millisecond on AGA, (two on ECS), leaving the processor largely free for other jobs; a

DATA STRUCTURES

Variable,	Where it points,	Size,	Grid min,	Grid max
Fount	Unpacked font words	2-8K	16x16	16x16
Fount+4096	Packed binary fonts	1-4K	8x8	8x16
Plane	Bitplane pixel data	4K-20K	256x192	640x287
CharMap	Character code bytes	0.5-2.3K	32x12	80x29
CList	Custom Copper list	2K-43K	N/A	N/A
Patterns	Eight stage animation	64-bytes	8x8	8x8

Example Listing 2 – Font Expander

```
DEFine PROCedure EXPAND_FOUNT(a,b,c)¶
REMark A and B are offsets in the page and C
counts WORDs¶
IF ShowTime THEN MOVE #6*256 TO COLOUR0 :REMark
First pass¶
MOVE #HEX("09A0") TO BLTCON0 :REMark D := A & C
(constant)¶
MOVE #0 TO BLTCON1 :REMark Ascending pass, get
even bytes¶
MOVE #-1 TO BLTAFWM :REMark Use all bits in
first word¶
MOVE #-1 TO BLTALWM :REMark Last word, use all
bits¶
MOVE #0 TO BLTAMOD :REMark Source modulo¶
MOVE #2 TO BLTDMOD :REMark Destination modulo¶
MOVE #HEX("FF00") TO BLTCDAT :REMark Byte mask¶
MOVE #a TO BLTAPTL :REMark Source¶
MOVE #b TO BLTDPTL :REMark Destination¶
MOVE #1024 TO DMACON_W :REMark Not Nasty (yet)¶
MOVE #c*64+1 TO BLTSIZE : WAIT 0,0 :REMark
Complete blit¶
IF ShowTime THEN MOVE #HEX("608") TO COLOUR0¶
MOVE #2 TO BLTCON1 :REMark Descending pass for
odd bytes¶
MOVE #a+2048-2 TO BLTAPTL :REMark Source
(predecremented)¶
MOVE #b+4096-2 TO BLTDPTL :REMark Destination is
4K later¶
MOVE #HEX("89A0") TO BLTCON0 :REMark D := (A *
256) & C¶
MOVE #c*64+1 TO BLTSIZE : WAIT 0,0 :REMark Let
Blit finish¶
END DEFine EXPAND_FOUNT¶
```

This unpacks an 8x8 pixel font from address A into C words at B

full-screen animation is under control but not using power. Our 1120 character dynamic-font mode uses less than half the possible blitter time and leaves most of the contended chip RAM bandwidth available to the processor. This is fine for TV screen modes, but if we try to get a terminal-style 80x24 display, we need shortcuts.

FONT EXPANSION

Font expansion is a luxury. It's easy enough to spread bytes, and if you're emulating a machine with a font in ROM or outside the normal memory map, you can smear it out once at the beginning, with the processor, to avoid the overhead of redoing for every display field. But if you're emulating an Atari 800, ZX-81 or other system where font changes yield immediate results on-screen, the combination code works just like the hardware. If you've much above 1600 characters on screen, you can't afford the time for this and character coding at 50 Hertz without flicker. In CharMode80x20, the last blit is completed during the eighteenth line. CP/M, the MS-DOS fallback MDA and classic terminal emulations all demand around 2,000 characters on screen. With more co-programming effort, CharMode manages over 2,300 – that's 116,000 eight-by-eight pixel pattern updates every second.

Example Listing 3 – MAKE_COPPER_BLITS

```
DEFine PROCedure
MAKE_COPPER_BLITS¶
REMark Work out start line LIN,
staying ahead of the beam¶
LIN=top_line%+HeadLines%-
CharHeight%-(CharHeight%=8)*((C
harLines%+3) DIV 4)¶
REMark Allow 1 extra scan per
32 for short characters, to
stay ahead of beam¶
IF BlitChars :LIN=LIN-
((CharColumns%*CharLines%) DIV
80):REMark Bytes to CList¶
IF BlitFount :LIN=LIN-28
:REMark Allow time to unpack 2K
fount to 4K¶
IF CharColumns%>64 THEN
LIN=LIN-CharLines%*2 :REMark
Time to unpack CharMap¶
WAIT 0,LIN : PRINT #0;"for line
";¶
IF LIN<1 THEN PRINT #0;"No time
- add HeadLines% if possible."
: STOP¶
t=CharHeight% :REMark Compute
WAIT period between character
blits¶
SELect ON t:=9 TO 11:GAP=70:=12
TO 16:GAP=t*2+60:=1 TO 8:GAP=58¶
IF CharColumns%>64 THEN
GAP=GAP-4*(t>8)-2*(t>11):REMark
Cut gap, more columns¶
COL=GAP:TextLineBytes%=CharColu
mns%*CharHeight%:Start%=HeadLin
es%*width%+8192¶
IF BlitChars THEN
CHARS_TO_CLIST
CharMap,CharColumns%*CharLines%¶
IF CharColumns%<=40 :
GAP=GAP*3/4 :REMark Not Nasty¶
IF BlitFount THEN EXPAND_FOUNT
fount+4096,fount,1024
:LIN=LIN+28¶
REMark Set Blitter registers
which are the same for every
character¶
IF ShowTime THEN MOVE #5 TO
COLOUR0 :REMark Blue during
blitting¶
IF CharColumns%>40 :MOVE
#32768+1024 TO DMACON_W :REMark
Get Nasty¶
MOVE #HEX("0DFC") TO BLTCON0
:REMark D := A v B for
characters¶
MOVE #HEX("8000") TO BLTCON1
:REMark B shift for each
character¶
MOVE #0 TO BLTBMOD : MOVE #0 TO
BLTAMOD : MOVE #width%-2 TO
BLTDMOD¶
IF BlitChars:POKE_W
FirstCharMove,copper-pagebase+6
:REMark First channel A ptr¶
REMark Generate code to blit
every pair of characters in
sequence¶
FOR textline=Start% TO
Start%+TextLineBytes%*(CharLine
s%-1) STEP TextLineBytes%¶
 N=textline : AT #0,3,32 :
PRINT #0,1+(N-Start%) DIV
TextLineBytes%;¶
 FOR column=1 TO CharColumns%
DIV 2¶
   MOVE #fount_low+66*charGap
TO BLTBPTL : MOVE
#fount_low+97*charGap TO
BLTAPTL¶
   MOVE #N TO BLTDPTL : N=N+2
: MOVE #1+CharHeight%*64 TO
BLTSIZE¶
   WAIT COL,LIN :REMark
Effectively WaitBlit¶
   COL=COL+GAP : IF COL>225
THEN COL=COL-226 : LIN=LIN+1¶
 END FOR column¶
END FOR textline¶
IF BlitChars:POKE_W
LastCharMove,copper-pagebase-18
:REMark Last B word ptr¶
IF ShowTime THEN MOVE #0 TO
COLOUR0¶
END DEFine MAKE_COPPER_BLITS¶
```

These Copper instructions are the kernel of the Character-mapped modes

TERMINAL CONDITION

If the Blitter isn't fast enough, the blue area extends off the bottom of the screen, and the Blitter will not reach the end of your character map. This happens at 2400 characters and beyond, even if we skip unpacking the font and spreading the character codes through the Copper List.

Rolls Royce Merlin engines have a 'boost' function that supplies extra power on a strictly temporary basis, injecting water into the cylinders; the Amiga chipset has an equivalent, the 'blitter nasty' mode, for when you want that last drop of performance and Know What You're Doing!

This mode speeds up the Blitter by giving it all available time slots, blocking CPU and even Zorro DMA access to Chip RAM. You can only do this for a few microseconds. We get away with it because our blits are short and we WAIT between each one. Our code guarantees blocks of free slots, evenly spaced across every scan line. This explains the LIN and GAP calculations in the MAKE_COPPER_BLITS procedure. LIN indicates when the blitter must start. For instance font unpacking takes about 28 lines, leaving the processor one slot in four. The time for each character depends on its height and the blitter mode, so GAP allows between 52 and 92 Copper cycles for each such blit. There are four new demos on the *AFCD* with all the files needed to run them in Amiga Qdos. You can make more by experimenting with the assignments at the start of CharMode_Bas.

Simon Goodwin



MailBag



Send your letters to: Letters To The Editor • Amiga Format • 30 Monmouth Street • Bath • Somerset • BA1 2BW or email: amformat@futurenet.co.uk – putting 'Mailbag' in the subject line.

✔ SEND US	SPARE US ✘
Your pictures, designs and photographs	Long drivelly letters with too many words (Have a thought for the sub editor!)
Your homebuilt Amiga projects	Attachments we can't read – like rtfs, for example
Your news about real world uses of the Amiga	Handwriting we can't read
Your opinions on *Amiga Format*	Questions we can't answer
Your ideas and requests for tutorials	Technical questions (these should be addressed to Workbench)
Your *general* questions and opinions (send the techy stuff to Workbench)	

WHERE'S NICK?

Ben,

Isn't email great? Back in the good ol' days (before I got my 500Mhz P3 £1500 thingyma-bob) I would have had to write out this letter by hand, get a stamp, put it in an envelope, seal it and give it to Mr Postman. Somewhere along the line, I would have probably realised what a waste of your time this letter was and I would have consigned it to the bin. Now, however, I can write it, and send it, before I realise how pathetic it is. Great huh?

I've got one question: "What happened to Nick Veitch?" OK, I'll admit I've been out of touch with *AF* for a while (but hey, I've still got issues 1 to 101 – yeah, that's right, issue 1 baby!) but I was reading your website – or rather the page of info Futurenet is giving you these days (didn't you used to have a HUGE website?) – and I found that Ben Vost was editor. What happened to Nick? Did he jump ship, or what? Is he on another magazine?

Well, that's enough question marks. I seem to remember that every letter I ever read said: "Keep up the good work guys". I have to assume that you're still doing at least a pretty good job, so: keep it up! Who knows, if my Amiga still works, I could be buying another issue! Oh, and by the way, what the hell is a bloody ROCK LOBSTER doin' inside my trusty old A500? Bye!

Alec Lyons
Alec@lyons3.netlineuk.net

Obviously not a regular reader so he won't read my reply – this is one example of the huge amounts of mail we get from once-readers. Oh yes, Nick has been working on DTP mag Computer Publishing (it's very good; it just doesn't have much to do with the Amiga these days). He is now working on the launch of Linux Format (the first issue comes out on 28th April).


intro
WHAT THIS MAGAZINE WILL DO FOR YOU
publishing
InDesign
Welcome to computer publishing
"Whatever set-up you have, check out our in-depth PostScript feature..."
Nick

Nick Veitch: We can still see him from where we're sitting – he just can't boss us about any more.

FEMALE CONNECTION

I have been a subscriber to *Amiga Format* for a few years now but I must admit that I digest very little of what I read, though I do like the adverts and I love the Beginners' Guides (I have not actually been able to complete one yet, but they keep me alert – this is no mean feat, as I have just had my 80th birthday.)

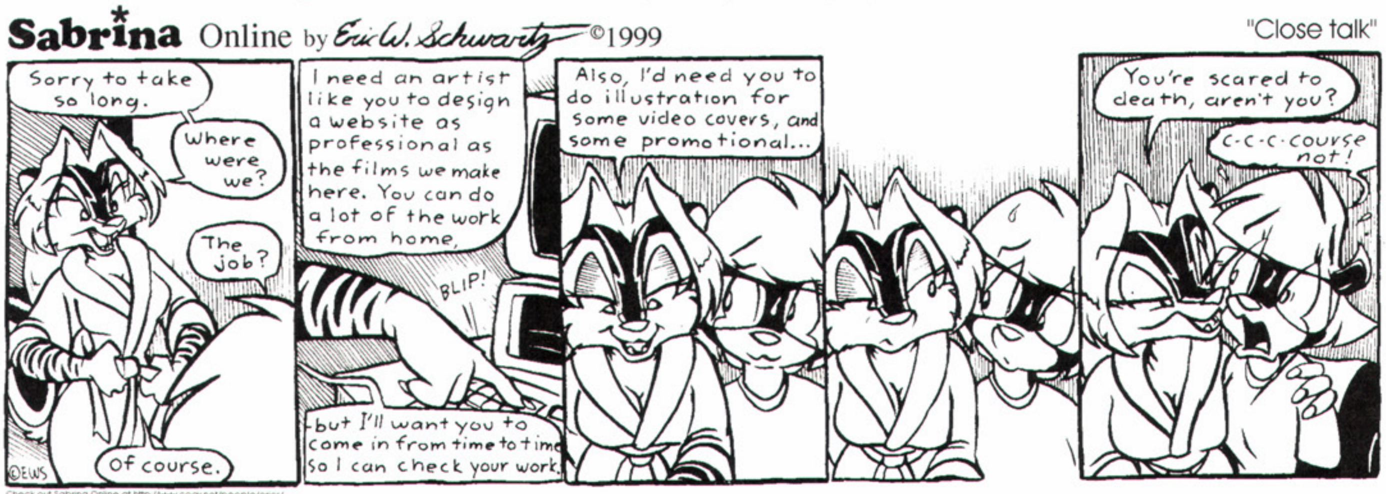
So why am I bothering you? Well, I have been trying to set up my previous Amiga 1200 as a gift for my grandson. I had been given a monitor, so I contacted Epic Marketing for advice on the connection lead that I would require. They told me I would need a 15/23 adaptor, so I bought one.

My problem: the 23 pin female fits perfectly in the Amiga, but the 15 pin female is of no use at all, as the monitor connection is also female. I contacted Epic Marketing again, and frankly, they said: "Tough Luck. There may be somewhere that does a connector, but we don't."

Can you advise please?

VL Silver, Belvedere

More of a Workbench question this one, but since you ask so nicely, I'll tell you that most monitors nowadays have female connectors and that you'll simply need to buy your grandson a 15-pin–15-pin male-to-male gender changer.



Check out Sabrina Online at http://www.coax.net/people/erics/

JUST BROWSING

In recent issues, people have voiced opinions on what we should have with the new Amiga. I agree with most of them, but one I have a problem with – the web browser.

Why do people want Netscape or Internet Explorer? The Amiga has perfectly good browsers made by companies who did not abandon the Amiga when the going got tough. Obviously, I would welcome any software house producing new stuff for the Amiga, as I'm sure we all would, but let's show a bit of loyalty and support for the ones that stuck by us and the Amiga .

Bob Hindle

bob@skyline1.freeserve.co.uk
www.skyline1.freeserve.co.uk

I quite agree with you Bob. The problem seems to be that folk tend to either not have the latest browser, or aren't registered for use with the browser they do use. Some demo versions of some Amiga browsers don't offer the full range of abilities that the fully registered version does – AWeb is a case in point.

The other "problem" with Amiga browsers is that they don't support things like Java, but then neither do most websites. What people are upset about is that they can't have Flash (they can through Voyager 3) or RealAudio (they sort of can through RA, though not easily) and the other plug-ins that are platform-specific and not browser-specific. If Amiga browsers supported (or more importantly the Amiga was supported by the third party plug-in manufacturers) people wouldn't complain so much.

PRODIGAL SON

I'm just writing to say that you have another convert. Originally I had a A500 which I ran *Music X* on. We, as a group, released one or two tunes using this sequencer. Then I came across an Amiga A1200 at the right price – this was way back.

When we ran the old *Music X* program, the tunes ran at a different speed on the A1200. This caused a problem with the synchronizer. So I started to think about getting a PC to use *Cubase*, which was the industry standard. As it went, music then fell by the wayside a little (a woman came along, etc) but I've recently started to dig my music gear out again (woman still intact) and I started looking at PCs again, until, that is, a mate of mine, who was into Amigas back then, started telling me about how good his Amiga was.

I thought he was just stuck in his ways but then I saw how quickly his Amiga was operating when compared to PCs running three or four times quicker CPUs (and maybe then some). He's obviously upgraded his Amiga (CPU to an '040' etc).

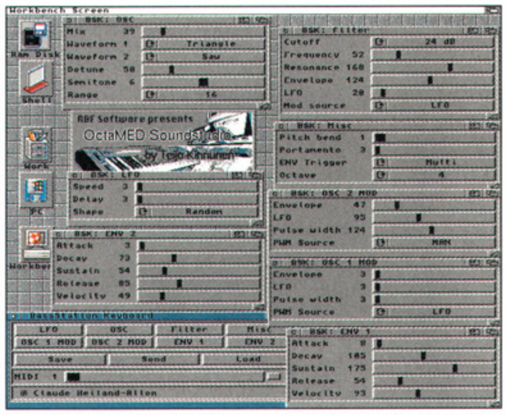
I was so impressed by the performance of his Amiga that I've started buying *Amiga Format* again and have started to update my own Amiga.

So I was wondering if there are any music upgrades for the *Music X* prog which could adapt to changes I may make on my machine. Any help down this line would be appreciated.

Dean

fastdead@madhousenet.co.uk

Probably the best bet for you would be OctaMED SoundStudio by RBF software. The Amiga version's free of charge, but I'm no musician...



OctaMED SoundStudio by RBF Software: the Amiga version is free.

MYSTERY MUSICIAN

In response to your dread regarding *BenchTrash 1.50*, I use whatever's most convenient; sometimes the CLI delete command, sometimes the volume trashcan, often *RubbishDump*, (which works pretty much the way *BenchTrash* does.) I'm not entirely happy with what I'm using, though, so thanks for recommending the latter. Once I finally get a partition made for OS3.5, I'll try it.

What I wanted to comment on, though, is *AFCD49*. I like the two music tracks, but so far I haven't found any reference anywhere saying what they are.

I haven't finished the magazine yet, so maybe I just haven't looked in the right place. It seems to me, though, that if you put music tracks in the CD, they ought to be listed somewhere on the box it comes in – even if it's just a boxout in an inside corner of the cover slip. Could you name the piece and author/musician. Please? Otherwise, good work and carry on.

Allan Burrows

essie@idirect.com

The tracks are detailed in the CD pages as usual, but you're right, we need to think of a better place to put a track listing.

> *When problems do arise, they're usually due to insufficient data or the incomplete evaluation of existing data*

BANGING THE METAL

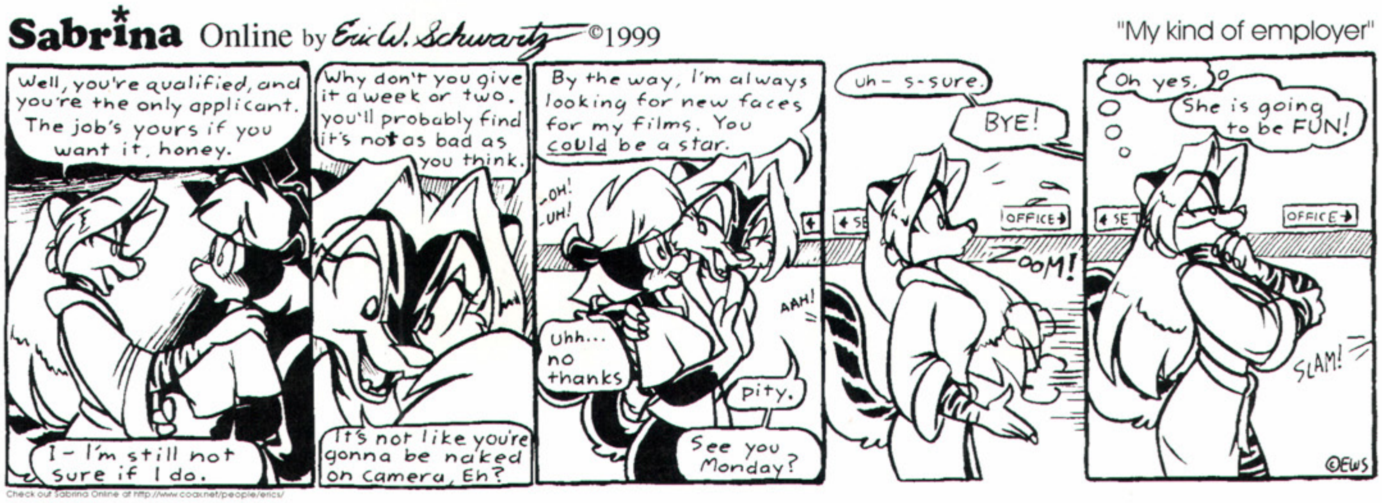
As a subscriber to your excellent magazine, I would like to thank both you and Richard Drummond for your patience, time and willingness in helping to resolve the many problems that face readers like myself who are unfamiliar with the Amiga computer. In this respect, the Helpline is of immeasurable value.

Long may it continue!

For the same reason, I believe it's essential for the new tutorial to continue by maximising on first principles. I do realize that this would mean a return to basics. It may also mean that it's not in the best interests of the magazine! I mention this because I believe the magazine to be geared towards readers already well advanced in the technique of computers.

Nevertheless, we all have to start at some point and I'm sure you will agree that information from whatever source is a prerequisite for any professional study. When problems do arise, they're usually

Continued overleaf ➡



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due to insufficient data or the incomplete evaluation of existing data. In other words, trying to understand the myriad of acronyms in Banging the Metal is like banging your head against a brick wall, if you don't understand the information that is made available. For this reason, and the complex nature of computer technology, I do feel that the tutorials should give a greater insight than they do at present.

I know it's asking for a great deal but I'm sure many of your readers would welcome the opportunity to glean more detailed information.

Further, as my main interest is electronics (wireless, in my day), an attempt was made to translate a program of electronic formulae to ARexx. The program was devised by me using BASIC language on an old Commodore C64. Needless to say, I failed miserably, mainly due to lack of knowledge using ARexx. Because the

> *If my crystal ball is right, mass production will cease to exist and mass customisation will be the norm*

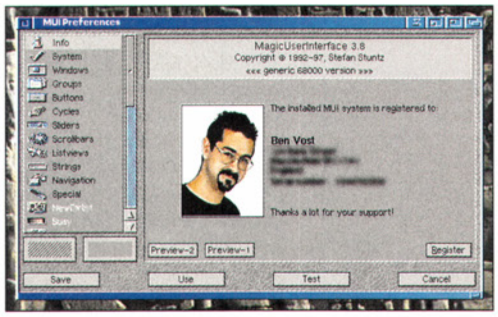
formulae are rather complex, I decided to use Amiga BASIC instead, by virtue of similarities in the language. I may be wrong, but I believe ARexx would have reduced the amount of input for the same program.

The Amiga A1200 is a versatile machine that can be custom-built to satisfy individual requirements. Naturally, a great deal depends on ancillary equipment, some examples of which are, according to reviews, less than efficient. It's an area of deep concern that leaves many bewildered as to what to do. The way events are moving at present, and if my crystal ball is right, mass production will cease to exist and mass customisation will be the norm. In other words, if it ain't needed, they won't build it. After all, variety is the spice of life. Why should we all be sheep?

In conclusion, forgive me for a lengthy letter, but I do hope that you will at least give some thought to the salient feature. All the best to you and your staff for the future of Future Publishing.

Travis Place, Clevedon

You're quite right, it would be something of a problem. We've kind of given ourselves heartache by trying to come up with chapter titles that work for the tutorials (so you can better see where you are in a tutorial), but each chapter can only consist of two pages. We could go for the lower end, as we do with our Complete Beginners Guides, but since we get very little feedback on the tutorials compared to the rest of the magazine, it's hard to judge the level required. Does anyone else feel the same as Mr. Place?



MUI interesante: Would you be interested in a MUI Beginner's Guide? Write and say.

IN THE MUI

Hello All at *AF* Towers,

I have just registered MUI and the whole process only took ten days, which, considering I chose to do it over the Christmas period wasn't too bad. The key file has been installed as per instructions and the info screen now shows that it is registered to me. The thing is that I was expecting something to be different once I had registered. Am I missing something or am I just terminally stupid? (Don't worry if it's the second; the wife often says this).

What about a beginners' guide to MUI and the possible hidden delights that the registered version has in store? And while we're not on the subject: Ben, please don't refer to us AFBers that don't post twenty mails a day as lurkers. Some of us are away from our homes all week and it would be nice to be thought of as something more than two eyes looking to see from under a stone in the mud.

Paul Crellin
p.crellin@ukonline.co.uk

The registered version will save all changes you make to your set-up, it's in the docs! A Beginners Guide to MUI is certainly already a topic up for discussion, but the Beginners Guides are actually one of the hardest parts of the magazine to write, and four pages on MUI might be a bit excessive.

NEW AMIGA DESIGN

Greetings!

Just thought I would write in and tell you all how the Amiga of the future should be designed. Now, from what I can gather, it seems that everyone thinks the new Amiga should be in a box (tower). If this is so, then they're all wrong. Let me explain. If you believe that a new Amiga can be sold like a PC – with a tower case, monitor, 20Gb HD, 128Mb RAM, DVD CD-ROM, etc – and have a price tag of £1,000 or more, then this is wrong. If you are to expect people to buy an Amiga in that price range when they can get a PC for that, then most would opt for the PC.

In my opinion, the best thing to do would be to design a new Amiga in the same way as the A1200 was designed. I don't mean that it should be AGA or

INTERMEDIATE INSTALLER

Dear Mr Vost,

With reference to my letter of 10th Jan, I have just received the Feb 2000 issue and I am pleased with the start of the OS3.5 Survival Guide, which, as if by magic, answers question three of my letter.

Unfortunately, as I said in my letter, I'm only an "intermediate installer" and I don't understand the answer that says: "The fix? Simple: just adjust the start from gadget in the Icon information window". I presume the icon involved is the "Wordworth(Tool)" icon, and the window is the one which lists:

Language = English
Clipart = DTP:Wordworth7/Clipart
Docs = DTP:Wordworth7/Docs
REXX = DTP:Wordworth7/WWRexx
(Tables = Work:Turbocalc/Sheets)
(Picasso = True)

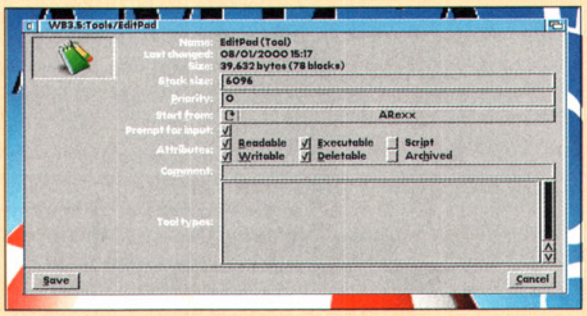
and the REXX listing is the one which needs altering... to what? The User's Guide says that I need a Keyword = Argument, but I cannot find any of the list of "keywords" which are recognised by Amiga DOS. It would be most useful to some of the more ill-informed users, like me, if a format like that which was included in "Setpatch Nightmares" (p 15) could be adopted.

Sorry for the whinge. Please be assured that it is greatly appreciated having someone who attempts to sort out problems, but it does seem unfortunate if the answers provided cannot be understood. I am a great fan of the "Beginners" series, by the way. Keep it up!

If it is of any help, I have not so far experienced any problems with the CDs (NSDPatch.cfg), but I must admit that I have found OS3.5 to be slower than OS3 (bearing in mind that it wasn't installed long), as I could not use Wordworth and the main screen was irritating and awkward to use, as it was all in such a jumble.

Yours sincerely,

Mike Turner
AClamp46@Netscapeonline.co.uk



Mike: Your cycle gadget is in the top half of the Icon Information window – now you can adjust it with confidence.

The gadget you talk about is a pop-up, or cycle gadget. It's in the top half of the Icon Information window. Ooh... this is easier to show with a picture than words – so we've put one right here to show you exactly what's going on. Hope that helps!

COLLECTORS' ITEM?

Dear Sir,

As an owner of a trusty old Amiga 500, I was pleasantly surprised to come across your magazine for sale in WH Smith, and also pleased to see that there is still a healthy interest in the Amiga.

Mine has been used mainly for DTP/word-processing over the last few years, and while I was moving it from where I was working recently, I noticed the serial number on the bottom. Considering how many of these machines were produced, must mine belong in a museum or personal collection?

The serial number is 1. Yes, 1 – ONE.

Perhaps you could advise me of its significance, and maybe put me in touch with any readers/collectors etc, who may appreciate owning what must be a piece of history! It currently has extra memory, GVP 49Mb HD, monitor, printer, etc, along with far too much software.

Mark Gronow, Milford Haven

It may well be the first A500 off the presses in this country, but the A500 had been selling well in Germany and, more importantly, in the US, long before we even got a glimpse of it, so it won't be that unique. But then again, it doesn't sound like yours is a very early machine (you don't give any details so it's hard to be sure, of course), so perhaps the full number got worn away, or maybe your machine was given a new serial number by whomever you bought it from or the company you worked for… Perhaps?

anything but that the whole hardware and graphics obviously should be changed to be able to compete with these super consoles. An updated Amiga OS should be slapped into the fastest, and cheapest, CPU available and it should have a cheap IDE HDD of 10G or more, with the graphical capabilities to compete with these new consoles – PS2 or Microsoft's X-box – and a 16-bit sound job.

Also, it should have a minimum 64M RAM. Like the A1200, this machine should also be able to be used on a TV, but it should be designed in such a way that being able to put it into a tower casing is easier and it should have a PCI slot, or AGP, or whatever slots are the standard, ready for when the user puts it into a tower. This would give it even better upgradability than the A1200. It should also have a port underneath, like the A1200, and the slot in the left hand side (PCMCIA, I think). And it should have a CD-ROM in the right hand side (slimline) where the floppy is on the A1200, and a 120Mb floppy drive above that.

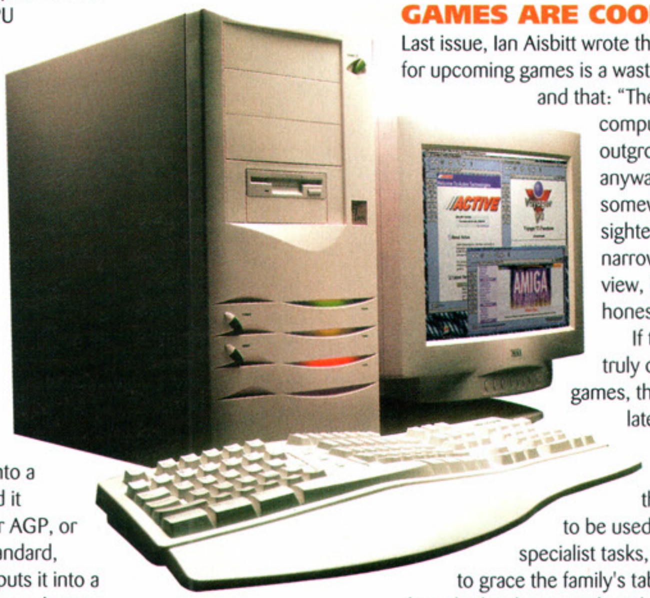
And again, it should be designed in such a way that when it is put in a tower, upgrading is easy. Don't forget a modem. Well forget the modem to save on price.

Now all this should retail at £250-£300 – at the most £350. This price tag should not be impossible if you consider that the Dreamcast and other consoles are selling for just over £200. If it could be achieved, then this would be the way to save the Amiga because people only bought Amigas in the first place as an alternative to the expensive PC.

So to achieve that former glory, the Amiga needs to be a cheap alternative capable of top games and all the things a PC can do, at a quarter of the price. No way will people buy an Amiga for £1,000 or more. They would sooner buy a PC. So, that's the way to go: a low cost computer aimed at gamers with the ability for so much more. Let's hope someone does this.

Steven Armstrong, Ermine

I don't think you're that far from the truth. The fact is that folk still like the A600 because of the fact that it's so portable, so a small machine would make a lot of sense. However, I'm not certain that you have your figures straight when it comes to the costings of such a machine. An Amiga, with a keyboard and so on is bound to come in at a significantly higher price than the next-generation consoles you talk about, even if it's only because of the fact that it has a keyboard and hard drive and considerably more memory than most consoles. Besides which, is that much memory really necessary? Most (though definitely not all) of the time I don't come close to touching the 128M RAM I have at home…



An Amiga in a tower should be made easy to upgrade.



GAMES ARE COOL

Last issue, Ian Aisbitt wrote that coverage for upcoming games is a waste of space and that: "The Amiga, as a computer, has outgrown games anyway". This is a somewhat short-sighted and narrow-minded view, in my own honest opinion.

If the Amiga has truly outgrown games, then we're too late; as a platform it is relegated to the backroom to be used only for specialist tasks, never again to grace the family's table. Games drive the hardware market; they push the boundaries of performance and the power of the gaming community's voice forces developers to design newer, faster and more capable systems. Word processors and spreadsheets don't need phenomenal amounts of MHz and Mbytes, games do.

The unwashed masses demand entertainment, not office software. In today's world, entertainment comes in the form of the Internet and games.

In the early '90s, the PC market exploded on the back of games like *Doom* and *Descent*. Games that exhibited characteristics never before seen, games that mimicked life a little bit more and allowed the gamer to interact with a totally new, albeit limited, universe – even if the only aim was kill as many other inhabitants of that universe as possible.

The next step in gaming will be the "total immersion experience", allowing players to interact with each other and a digital universe and to affect situations and outcomes in that universe. Hopefully, games like *E2260* will offer that experience.

Whatever happens, the Amiga needs games to survive. Good games will entice back those lost souls who left for higher frame rates. We need those people back to expand the market and also to get more programmers producing the quality games that made the Amiga what it was.

The time is ripe for our return, soul-less offerings like *Tomb Raider IV* will give us the opportunity to rule once more. All we need is for the programmers that I'm sure are out there to take inspiration from the modern game, and to add their own twist and a bit more depth.

By the way, sad to see Tony Horgan go, but yeah, you were getting a bit too depressing for me, mate. Never mind, I will remember you and CU Amiga with great fondness. RIP.

Regards, in anticipation of all the outraged replies.

Phil Allen
funkygibbon@talk21.com

Phil raises some interesting points.

Certainly, while I don't play many games on my own Amiga, I'm happy to concede that they certainly have a place in the Amiga's software library, and that the new games on the way for the Amiga are finally driving the hardware forward in the same way that they have on other platforms.

However, it's a sad fact of life that while games are an important facet of the Amiga, they are extremely undervalued by the people who own one. This is proven by the fact that games sell in such tiny numbers these days and are hideously prone to piracy. As an example, there are plenty of people out there with the capability to run WipEout 2097, and yet, fewer than 1000 copies were sold.

Now, you may argue that the game was old, most people already had it in one form or another on their console, or indeed that they didn't like the game. Even so, you'd think it would have achieved more sales than it did. It would plainly be nice to think that the piracy was limited to the games arena, and yet it is not.

With fewer and fewer software sales being made these days into the Amiga market, it's a wonder to me that there are any programmers out there willing to effectively waste months of their time developing software for people to pirate.

Ben Vost

The Gallery

On the CD -ReaderStuff-/-Gallery-

Roll up! Roll up! Bring your works of art here! We love 'em all, but only one artist can win our fifty quid!



£50 WINNER!

EASTEREGG
by Roy Burton

Roy's image wins our Gallery this issue. The writing on the easter egg could do with being at better resolution, but we really liked the composition, the palette and the technical merit of the picture – making use of depth of field and so on. Others should also take note that Roy gave us a good description in his ReadMe of how he achieved the effects in this picture.







fantasy and parts
by Richard Armitage

Richard's fantasy composition has a nice "Planet of the Apes" feel about it, but needs to have its resolutions matched so you don't end up with the blurry right next to the pin-sharp. And while his "parts" image looks great, there aren't many details about it in the ReadMe.



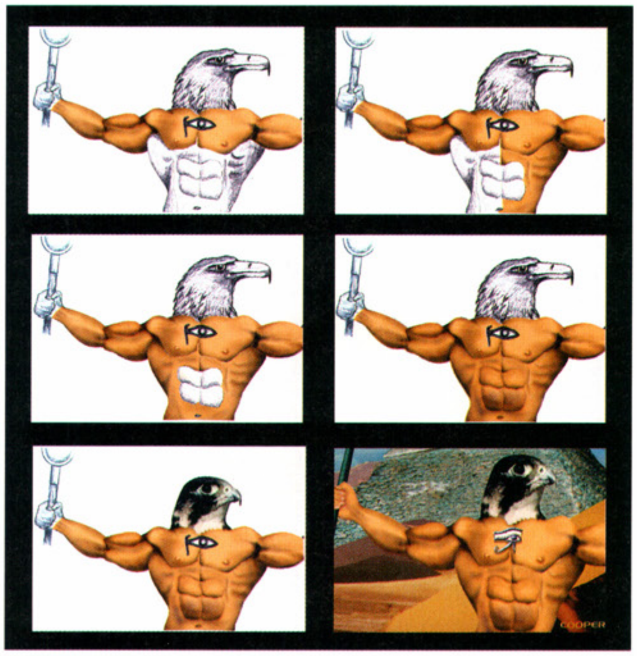
OS3.5_Man by Bill Brown

Bill's montage came to him in a flash after "a couple of pints". It's very charitable of him to give so much blood... The image is a good example of resolution matching; none of the parts feels too much like it has been swiped from elsewhere, an important aspect of montage.

CONTRIBUTIONS

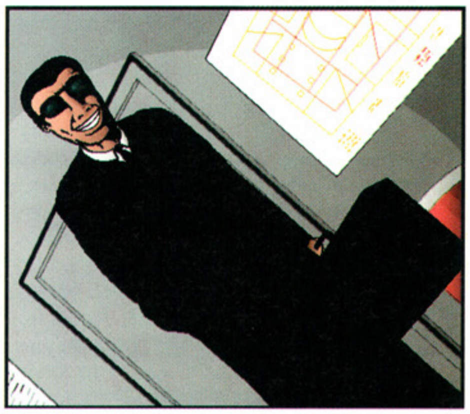
If you'd like to enter your work (and it should be only your work!) for the Gallery section on the CD and the pages in *Amiga Format*, read the Reader Submissions advice on the CD (you can find it in various places) or simply make use of the form that can be found on the CD pages of this issue.





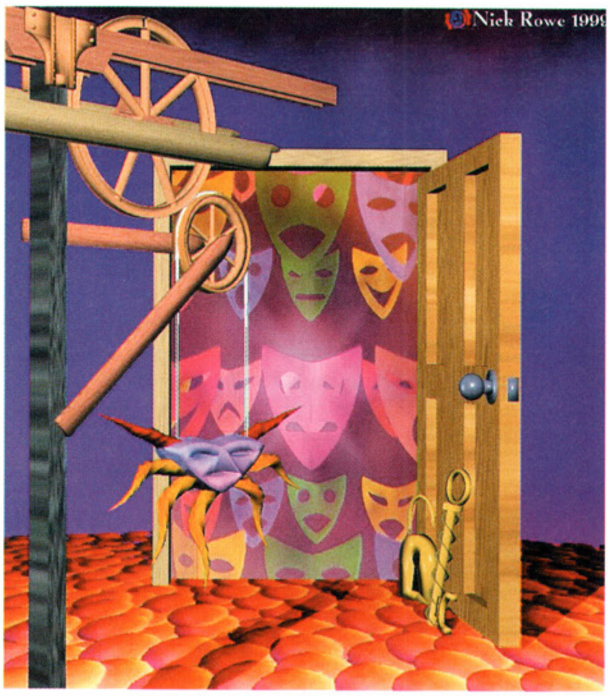
RA_Final and RA_Step_by_Step
by John Cooper

John's latest image is hyuuuge! You won't be able to view it on your Amiga unless you a) have a graphics card and b) have an image processing program capable of showing an image at higher magnification. The image is a good idea, but even so, we had misgivings about it because of the fact that it mixed images at different resolutions and again, different levels of grain and sharpness. Keep 'em coming though John!



Bad_Business
by Chris Spicer

Chris brings us more comic-strip style drawing, in a freeform experiment in PPaint. He says that he has a wide range of comic strip artwork, so let us see some more Chris. Go on.



ExitOnly.jpg
by Nick Rowe

Nick's picture is a composition inspired by James Marsh's work, and is composited from two rendered images. Nick's shadows are actually hand-drawn to give him extra flexibility. As for image size Nick, the larger the better for the printed page.



Snookertable2
by Paul Smith

A nice render with very good texturing, but it isn't a very dynamic scene Paul. Perhaps rendering the table at an angle, or more of a close up on the balls, or even the snooker table post-break would have given a more interesting image?

AFCD 51



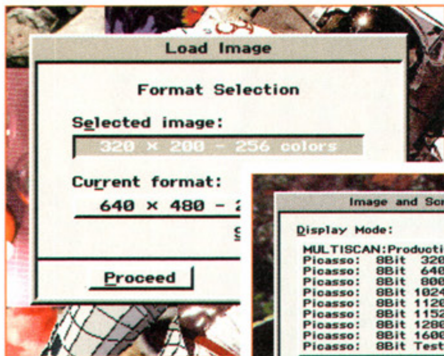
Another full commercial program for you to enjoy and the usual mixture of serious and fun software

PPAINT 7.1B

-Serious-/-Commercial-/PPaint

Personal Paint is the most powerful bitmap paint program for palette-mapped images on any platform. In an exclusive deal, *Amiga Format* brings the you full, commercial version 7.1b release – free of charge.

PPaint can only handle images with 256 colours or less, but it does this so well that, combined with its superb colour reduction and remapping facilities, it is an ideal tool for creating images for applications where bandwidth is a premium. It is great for creating web graphics, system icons, gadget images, artwork for games or just general low-colour painting. *PPaint* has a powerful set of drawing tools, copes with a wide range of screenmodes, and can handle all the common image file formats. It has configurable image processing effects, animation facilities, and an ARexx port for interfacing it with other software and for creating macros.



You may already have a copy of *PPaint*, since *PPaint 6.4* has been made freely distributable for some time, but this version has a number of improvements including better handling of RTG screenmodes. Also included is full documentation in AmigaGuide format, a host of ARexx scripts, the full set of image loaders and savers, oodles of example projects and much more.

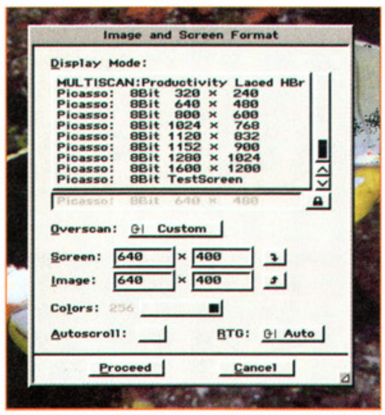
Installation of *PPaint* is easy. A script is provided in the Utilities drawer on the CD. A minimum installation will take up 2M of hard drive space – the full monty 65M.

Once installed, you may like to take advantage of a *PPaint* executable optimised for your specific processor. These are located in Utilities/CPUs drawer. Just drag the version for your processor into your main *PPaint* drawer.

When you first load up *PPaint*, you will be presented with a blank canvas, by default in a lores NTSC screenmode. You change this mode by selecting the Image Format option from the project menu. (This mode can then be saved as the default with Save option from the Settings menu.) A requester pops up where you choose a screenmode, size and depth for your purposes.

PPaint will work equally well on graphics card screens as well as native Amiga screens. A point worth making is that the screenmode can be locked by clicking on the padlock gadget. Normally, when you load an image into *PPaint*, the screenmode will be changed to whatever mode the image was created in. This is undesirable if that mode is one that your graphics and monitor set-up cannot handle. By locking, you force any images loaded to be converted into whatever screenmode you have chosen.

An image can be loaded from disk with the Load Image option from the Project menu. *PPaint 7.1* supports such format as ILBM, GIF, JPEG, PNG and any datatype-supported format.



Changing your screen format is easy within Personal Paint.

If the size and depth of the selected image is different from the current screen, then a requester will pop up, asking if want to change it. Clicking on the current format button will force the image into the current screen size and depth. If the current screen has too few colours, the loaded image will be colour-reduced. If its size differs, the Stretch option will scale the new image to fit; otherwise the new image will be cropped. True-colour images, such as JPEGs, will always have to be colour-reduced when loaded into *PPaint*.

DRAWING TOOLS

PPaint provides a rich set of tools for drawing, but is actually easy to use because of its intuitiveness. In simple terms, all you have to do is select a brush you want to

TOOLBAR



1. Brushes Left-click to select a pre-defined brush to paint with.

Left-click the number to choose a custom brush, right-click to select the brush number.

Drawing tools Tools marked with an L support line mode drawing, those with an A area mode. For those which support both, left-clicking in the top half of the button enters line mode, left-clicking in the bottom enters area mode. Tools marked with an S can be configured with a right-click.

2. Dotted freehand (L)
3. Continuous freehand (LAS)
4. Curve (LS)
5. Straight line (LS)
6. Circle (LAS)
7. Rectangle (LAS)
8. Ellipse (LAS)
9. Polygon (LA)
10. Airbrush (LS)
11. Fill (AS)
12. Text (S)

Others

13. Image processing. Right-click to select a function, or left-click to repeat the last selected function.
14. Macros. Right-click to select a macro, right-click to run the previously selected macro.
15. Define brush. Left-click to pick up a rectangular brush, again for arbitrarily-shaped brush. Right-click to select the previous brush.
16. Zoom. Left click to zoom in to a magnified area, right click to zoom out.
17. Magnify. Left click to select area to magnify.
18. Clear. Left click to clear the screen to the background colour.
19. Undo. Left click to undo the last operation, right click to redo an operation.
20. Colours. Left click to pick up a colour from the screen, right-click to open the palette requester.
21. Palette. Left click to select the foreground colour, right click the background.

draw with, select a drawing tool and then use the left mouse button to paint with that brush on screen in the foreground colour and the right mouse button to paint with background colour. The basic drawing tool is the dotted freehand and the default brush is the single pixel. This allows freehand drawing with the mouse but takes a lot of practice to use effectively.

The background and foreground colours are selected with the palette tool at the bottom left of the screen. Left-click on a colour to choose it as the foreground drawing colour, right-click to select it as the background. The current foreground colour is shown as the inner rectangle on the colour tool of the toolbar, the current background colour the outer. Left-clicking on the colour tool allows you pick up a colour from the image you are working on. Right-clicking pops up a window where you can edit the current palette.

BRUSHES, BRUSHES AND MORE BRUSHES

The current brush may be any of the pre-defined brushes or a custom brush. The pre-defined brushes are shown at the top-left of the toolbar; select one of these shapes to paint with it.

The number in the bottom left of the two rows of brushes represent the current

> PPaint has a powerful set of drawing tools, copes with a wide range of screenmodes and can handle all the common image file formats

custom brush. Left-click here to select the brush corresponding to that number. Right-clicking will pop-up a menu where you can select the number of a different custom brush you want to use. *PPaint* provides nine slots to store these custom brushes in. You define a custom brush either by loading an image from disk or by picking up an area from the current screen. This is done by left-clicking the brush tool on the toolbar. Clicking will allow you define a rectangular area to pick up, clicking again will allow you to draw an arbitrarily-shaped area in freehand to pick up.



PPaint supports author information tags in most images.

WHAT'S NEW



Are you getting anything like this on your Amiga? Drop us a line and tell us.

Just when you thought we couldn't improve the *Amiga Format* coverdisk any more, we've gone and done it again.

Ben's been beavering away on the HTML pages some more, giving them a graphical tweak here and a stylistic tweak there. The pages have been optimised to work better on lower resolution screens – good news for those still using PAL or NTSC screenmodes – and the Javascript should now function no matter which JS-enabled browser you are using.

A new addition to our CD is disk images of the Workbench 3.0 floppy disk set. And before you start worrying about piracy, we have arranged special permission from Petro to do this. These will come in handy for WB3.0 users who has lost or damaged their original disks. They are all in DMS form, but if you have our *AFCDView* system installed, a simple double-click on one of the archives will unpack it.

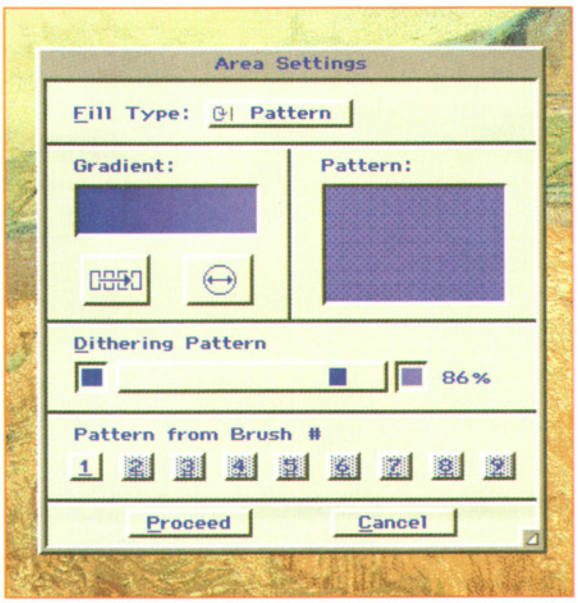
The last newsworthy change is an update to overcome a Y2K problem that we missed. Here we were, proclaiming that the Amiga was largely unaffected by the Millennium Bug, while all the time we had an instance on our own coverdisks. The problem is that the version of LhA contained on our CDs simply locks up when used any time after the January 1, 2000. So, trying to unpack an LhA archive using the AFCDView mechanism would simply produce a hanged console window with no output. A bug-fixed copy is included this issue, which you should install to your system's C: drawer.

When painting with a user-defined brush, a colour mode also applies, selectable via the Paint Mode option in the Brush menu. The default mode is Matte, where painting with the brush causes the foreground colours of the brush to applied to screen, but the background colour of the brush is considered transparent and is ignored. In Colour mode, all foreground colours of the brush are drawn onto the screen as the currently selected foreground colour and the background colour is again transparent. The third mode is Replace mode, where both the brushes foreground and background colours are painted onto the screen, replacing anything underneath.

Each drawing tool supports either a line mode or an area mode or both. For example, the circle tool in line mode will draw the outline of a circle, in area mode it will draw a filled disc. In line mode, the outline of the shape will drawn with the current brush and the selected foreground or background colour. In area mode, it will fill according to a selected fill pattern.

If a tool supports both modes, left-clicking in the top half of the button will select line mode, in the bottom half will select area mode. Most tools allow the characteristic of the tools to be configured with a requester that pops up by right-clicking the button. For line tools, you can set a line type, that is, whether it is a continuous line or is made from the first row of data from a brush. For area tools, you can set the fill type, whether solid, a gradient or the pattern from one of the user-defined brushes. This may all sound rather complex, but it is actually very intuitive. It much easier to use than it is to explain. I recommend experimentation with the different drawing tools and modes to get the hang of how they work. I have only begun to touch on *PPaint*'s features.

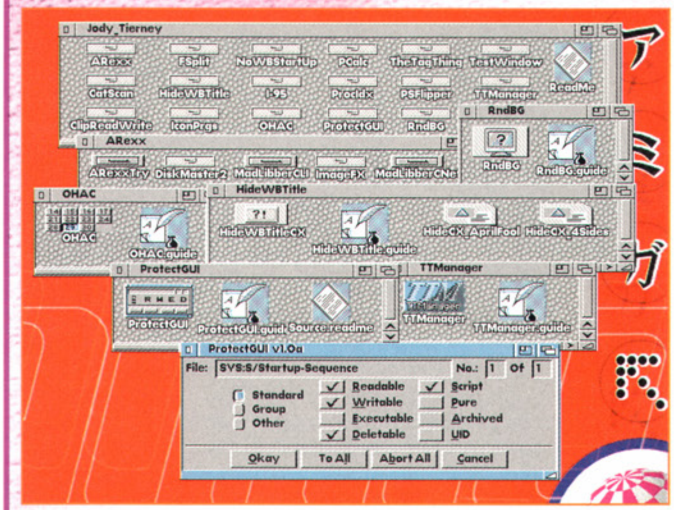
Luckily, the manual on the coverdisk documents its functions well and includes some very good tutorial sections. The best way to learn the program, however, is to play around with it.



Fills and filled drawing tools can have plenty of attributes, including filling with a gradient or a brush.

Continued overleaf ➡

Your Stuff!





£50 WINNER!

There's so much good stuff of yours on this month's coverdisc that it was difficult to choose a Reader's Contribution prize winner. In the end, I decided to opt for a balance between quantity and quality.

Jody Tierney has sent us a megabyte and a half or his or her (don't you just love bisexual names?) work, a pot pourri of ARexx scripts, shell tools and a miscellany of utiltities. What's even better, the source code for all the programs, the majority written in E, has also been supplied. Tools are provided for manipulating icons, reading and writing files to the clipboard, randomizing Workbench patterns, disabling the WBStartup drawer and loads more. My favourite is a GUI to set AmigaDOS protection flags on files. It handles multiple files simply and understands the muFS UNIX-style group and other permissions. Jody now has a well-earned fifty notes heading his or her way.



Fantastic god-game antics to be had in our demo of Foundation DC.

FOUNDATION DC

-ScreenPlay-/Commercial/FoundationDemo

One of the best original Amiga game releases of 1998 was Paul Burkey's *Foundation*. Its update, *The Director's Cut*, was one of last year's highlights and won an *AF Gold Medal* (see the review in *AF130*).

And, just in case you still haven't bought a copy yet, here's a playable demo to convince you.

WHAT'S IT ALL ABAHT?

Foundation is a God game, or resource management game – call it what you will. You are given a series of missions which you must complete, and in each mission you are put in charge of a tribe on an island (which you may share with hostile tribes).

You must direct your tribe, get them to mine raw materials, grow food, erect buildings, invent new technologies and, hopefully, multiply. Look after your tribe and you will eventually be strong enough to attempt your mission, whether it is to perform a rescue or capture an enemy tribe's headquarters.



Gorgeous graphics don't make a game – but they look nice.

The full game features forty missions, but this demo version has only one. The technology available to your tribe in the demo is also limited and the loading and saving of game positions has been disabled. Everything else is here, however, including the cute graphics and sound and the addictive gameplay.

Foundation can be a little bit difficult to get to grips with initially, because there is a lot to learn. Because of this, extensive documentation is provided on the coverdisk to guide you through it. Study this carefully, persevere and you will find that it's a rewarding game.

NEW DATATYPES



View all sorts of filetypes courtesy of Workbench's datatype system and these datatypes.

NEW DATATYPES

-Serious-/Workbench/-Datatypes-

Datatypes may be rather dull, but they are damn useful little things. And they are one area of AmigaOS that seem to get a lot of attention from third-party developers. Consequently, there is always a steady stream of new and updated datatypes appearing on the Aminet.

We've rounded up a collection of the newest and best for your perusal. Some of these take advantage of the updated datatypes system as supplied with OS3.5. Here we have the industrious Mr Kleinert's AKDatatypes, covering JPEG, PNG and TIFF formats; we have Oliver Roberts, WarpUp JPEG and PNG datatypes, currently the fastest in the west; also included other datatypes for icon, PhotoCD and XPM images.

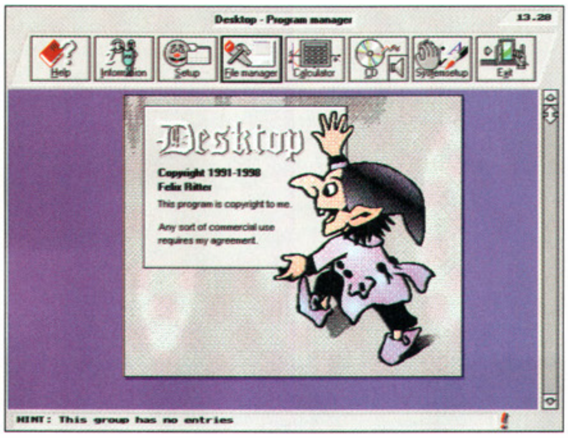
We also include the latest datatype updates in this section of the CD as they appear. Watch this space to ensure to keep your system's handling of different file formats in tip-top shape.

EMULATORS UPDATE

-In_the_Mag-/Fusion
-In_the_Mag-/FreeDOS

Last issue we brought you full versions of *Fusion* and *PCx*, the Mac and PC emulators, respectively. (If you missed this great giveaway, turn to page 80 to find out how to order a back issue.)

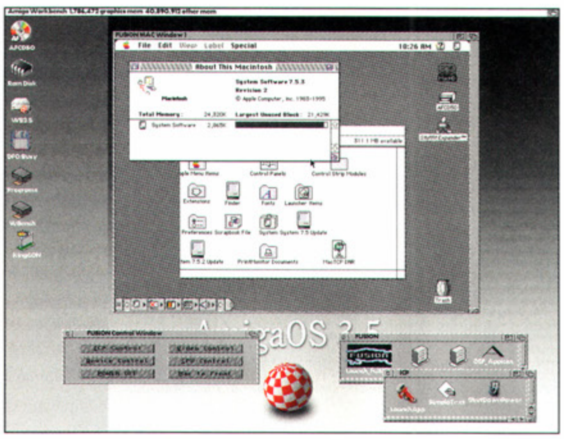
Both of these programs are incredibly powerful but can be difficult to set up. Also, since most Amiga owners don't have a high-density floppy drive, installing an appropriate operating system to run on either emulator can be hard work. *Amiga Format* comes to the rescue once more with prepared hard files to enable you to boot up your virtual Mac or PC.



FreeDOS' graphical front end isn't a patch on what we're used to as Amiga owners. Nice imp, though...

HARD ENOUGH?

For *Fusion*, we have supplied a bootable hardfile containing a full installation of MacOS 7.5.5. This is the latest version that is freely downloadable from Apple's website. To use this with *Fusion*, simply copy it to your hardfiles directory and select it in *Fusion*'s devices options. Note that you still require a Macintosh boot ROM image to make this work. For better performance, you will probably want to create a dedicated Mac partition and copy the contents of the hardfile to that from within MacOS.



If you couldn't get our previous coverdisk giveaway to work, this hardfile will help. You'll still need a Mac ROM, mind.

The other hardfile is for PCx and contains an installation of FreeDOS, the open source MS-DOS clone. Once again, installation is simply a matter of copying the supplied hardfile to your hard files drawer. It should be noted that FreeDOS is (at time of compiling the CD) still at the beta stage of development, so may not be completely reliable on your emulated PC. During testing, for example, I found that I could not format floppy disks and the free CD filesystem supplied would not work at all with the PCx CD-ROM driver.

Being a DOS clone, FreeDOS suffers from many of the same problems as DOS. Full documentation on FreeDOS is supplied, and more information, help and the latest updates are available from http://www.freedos.org/.

Richard Drummond

DISCLAIMER

This *AFCD* has been thoroughly scanned and tested at all stages of production. We recommend that you always run a virus checker on ANY software before running it. Future Publishing Limited cannot accept any responsibility for disruption, damage and/or loss to your data or your computer system which may occur while using this disc, the programs or the data on it. Ensure that you have up-to-date backups of data contained on your hard drives before running any new software. If you do not accept these conditions, do not use this disc.

DISC NOT WORKING?

If your *AFCD* is defective, please return it to the address below. Please make sure you have followed our installation procedures correctly to ensure that there is no physical problem. Please send us the *AFCD* along with a description of the fault (not forgetting your name and address). A new working version should be returned to you within 28 days. The return address for faulty discs is:

TIB PLC • UNIT 5 • TRIANGLE BUSINESS PARK • PENTREBACH • MERTHYR TYDFIL • CF48 4YB

Your *AFCD* should only need replacing if the CD itself cannot be read. If you're experiencing problems with an individual application, phone our technical support line This is open between the hours of 2pm and 5pm every Tuesday.

Tel: 01225 442244 Fax: 01225 732341
Email: amformat@futurenet.co.uk
(Please remember to put "Coverdisk" in the subject line.)

Please note that the helpline staff provide assistance with technical problems directly related to the CD and cannot provide training on the software or hardware in general.

We want your work!

You can either send it to us on floppies, Zip disks or CDs (we do take other media formats too). If you are going to send us a multiple floppy backup of your work, please use the version of *ABackup* we supply on the CD in the +System+/Tools/Disk_Tools drawer. We'll return any Zips you send us, so don't worry about getting your disks back.

If you have any further queries about how to send your software in then consult the Submissions Advice on the CD (in Start_Here!, or in the ReaderStuff or +System+/Info drawers).

Files you send this month will probably appear on *AFCD52* – *AF*'s May 2000 issue.

Please tell us:

Your name: ....

Your address: ....

....

Your postcode: ....

A contact number or email address: ....

Your signature: ....

In respect of all material which forms my reader contribution to Future Publishing's Amiga Format I hereby warrant that:-
(1) the material is original and does not infringe any other material or rights;
(2) the material does not contain any material which is defamatory, obscene or indecent and is exempt from classification under the Video Recordings Act 1984;
(3) that there are no legal claims against the material provided;
(4) that I have full power and authority to provide this material to Future Publishing.

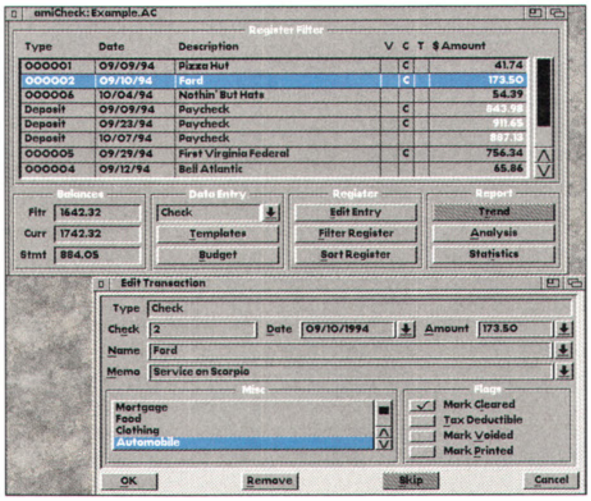


Serious Disk

Yet more extremely useful and wonderfully free Amiga software has been hibernating on your cover disk

AMICHECK

AmiCheck is an powerful, easy-to-use cheque book and bank account management package. *AmiCheck* enables you to view the register (balance sheet with all entries). It also includes filters to filter out unwanted entries. If you've ever had problems balancing your chequebook and bank statements, *AmiCheck* could very well be your answer. *AmiCheck* should work on most Amigas and its installation is simply a matter of dragging its directory to your chosen location and then copying a few libraries to your LIBS: directory.



Take control of your chequebook with the easy-to-use and powerful AmiCheck.

MRQ

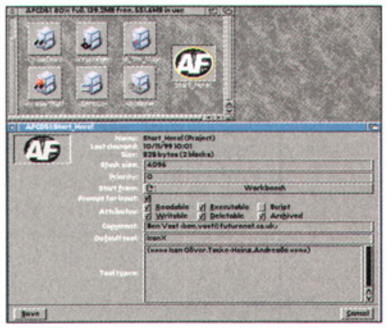
MRQ is a MUI-based system patch based around the old *ARQ*, the program that enhanced (and even animated) the Amiga's system requesters. It does everything that *ARQ* ever did and also adds quite a few additional features, probably the best being its configurability. *MRQ* even has ARexx support and allows every image to be combined with an ARexx command. Both command and port are configurable, so you can send messages to any program when a particular requester pops up, even start programs or shellscripts, through ARexx's system interface. *MRQ* requires an Amiga running WB3 and MUI and equipped with at least an 020 processor. The supplied NewImage.mcc is also required and installation is performed via the supplied installer script.

RAWBINFO

RAWBInfo is a replacement for the AmigaOS3.5 icon information window but, unlike the original one supplied with OS3.5, *RAWBInfo* uses OS3.5's ReAction for its user interface. *RAWBInfo* features numerous improvements over the OS3.5 offering including full drag 'n' drop support.

RAWBInfo not only allows you to change icons by dragging the new icon onto the old one in its window but it also allows you to copy the tooltypes from a new icon to the tooltypes on the old one by simply dropping the icon on the tooltype's gadget. The fun doesn't stop there, *RAWBInfo* also offers a whole host of configuration settings allowing you to do such things as opening its window in the centre of the workbench screen (instead of the default top left), disabling both the saving of any pre OS3.5 icon data and original newIcon data. It can also define a list of default tools.

RAWBInfo can be started either from shell or from its icon but it is recommended that installation is conducted via the supplied installer script. Being an OS3.5 only program, *RAWBInfo* obviously requires Workbench 3.5 to run.



RAWBInfo adds power to your OS3.5 info windows.

WBSTARTUP+

WBStartup+ has been a favourite of mine for many years and this is the latest (and possibly last) update that fixes a few incompatibility problems with OS3.5. For the uninitiated, *WBStartup+* basically allows you to totally control the running of the programs inside your WBStartup directory. Among its comprehensive list of features, *WBStartup+* enables you to choose the order in which the programs are run, allows you to disable/enable any of the programs and, if you wish, totally disable all WBStartup programs. Installation is via an install script and full documentation can be found in the author's readme files.

Errol Madoo

MATRIXBL

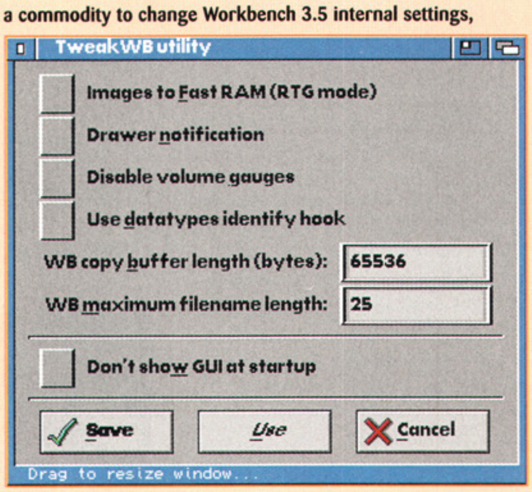
There can't be anyone left out there who hasn't, at the very least, heard of *The Matrix* – the massive blockbuster film from last year and, at the time of writing, the biggest selling DVD of all time (not that records go back all that far).

Anyway, I thought that I'd include this neat little *Matrix* screensaver for all you *Matrix* fans. If the thought of having your Amiga connected to the Matrix is one that pleases you, double click on the MatrixBL icon and your reality will be instantly transformed.

Be warned though: this screensaver only monitors mouse movement, so if you are busy typing (like I am now) the screensaver will kick in after the pre-determined timespan.

TWEAKWB

TweakWB, similar to *TweakUi* found on Windows, is a commodity to change Workbench 3.5 internal settings, simple "deficons" replacement and handy drag-n-drop MWB icons converting tool to the new 3.5 icon format. It has features such as drawer notification, disabling volume gauges, using datatypes identification hook, adjusting Workbench's maximum filename length and, for graphic's card uses, the ability to store Workbench's allocated image memory to either fast or chip ram. Installation (OS3.5 only) involves copying various files to various locations. Full details can be found in the author's readme file. *TweakWB* requires no special files and should work on any Amiga running OS3.5 although some software incompatibilities exist. So check out the author's readme files before you install it.



TweakWB allows you to tweak some of OS3.5's inner workings.



Games Disk

Step into an alternative reality of free poker classes and inter-planetary colonialism

DAWNVIDEOPOKER

DawnVideoPoker is a video poker machine simulator that adheres to the standard poker rules, as well as adding a few new ones thought up by the author. A "Double or Nothing" sub-game and an "Aces High" feature are also included as variations and probably the only things really missing are the cash payouts. *DawnVideoPoker* should work on most Amigas.

It only really requires a basic knowledge of poker and is installed by dragging its drawer to your preferred location.



Poker eh? I've heard so many good things about that game. How do you play it again?

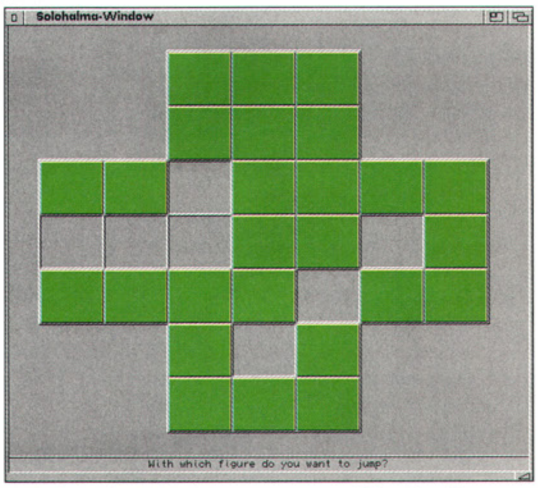
PATIENCE

Patience, as the name suggests is a card game for your Amiga. Rather than just being a single game, *Patience* has a front end that allows direct access to no less than 20 card games. Including age old favourites such as Klondike and Freecell clones, *Patience* is guaranteed to offer something for even the most demanding of Amiga card game players. Most of the games feature a really nifty animated demonstration mode where the cards are dealt and one card at a time is played, while a text description of what is happening is displayed at the bottom of the screen. This is a neat idea and, on the whole, it is implemented very well, though things do happen a little fast at times. For those of you that prefer standard methods of help, text based help files are also available for all card games within *Patience*. To install *Patience*, simply drag the main drawer to a desired location on your hard drive and copy the Black_Knight font files to your systems fonts drawer.

If you miss an egg while the bunny is watching, you will only get half a chicken – great if you are about to die but not good if you are hungry

SOLOHALMA

Solohalma is a little game that runs on your Workbench screen and was designed to keep you entertained while your Amiga is busy doing something else. *Solohalma* is a one player game and its rules are quite easy. Once your playfield has been setup you must choose your first square, then you can jump 2 squares in either a horizontal or vertical direction to another coloured square. Once the move has been completed, the coloured squares are removed and the process is repeated until it is no longer possible to perform another jump. The aim of the game is to get to the end with only one square left on the playfield. *Solohalma* should work on any Amiga with at least Workbench 2 but for locale support and colour allocation, Workbench 3+ is needed.



Jump lots of green squares on your Workbench with Solohalma.

STARBASE

Starbase is an involved and complex strategy simulation where your basic aim is to build up a new colony on a strange planet. But actually building a new colony is the simple bit – while you are building houses, trading and generally inhabiting the planet, you are also racing against four other computer controlled enemy players, each intent on doing the same. Only one of you will win the fight and occupy the planet. With any luck this will be you.

Starbase should work on most Amigas, although faster Amigas are recommended. Installation, requiring only 665K, is simply a matter of dragging the complete *Starbase* directory to your hard drive and double clicking on the *Starbase* icon.

Errol Madoo

WOLF

***Wolf* is a pretty good remake of the original Russian electronic game that was very popular in the mid '80s. The basic idea, if you weren't in Russia in the mid '80s, is to collect the falling eggs from the two chutes at each side of the screen. If you miss an egg, it smashes on the floor and a chicken is born. Get three chickens and you die. To add even more spice to the already rather complex gameplay, a bunny pops up every now and then, and if you miss an egg while the bunny is watching, you will only get half a chicken – great if you are about to die but not good if you are hungry! The game is played on your Workbench screen and your keyboard and features two game modes – Game A for beginners and Game B for those who like to seriously abuse their keyboards. The game speed and number of eggs increases during gameplay and chickens will be erased (presumably eaten by the wolf) when you collect a pre-defined number of eggs. *Wolf* is completely self contained and can be installed by simply dragging its icon to a new location on your system.**



Wolf features a pretty authentic looking interface that runs on your Workbench.

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540 meg 2.5" hard drive, cable, screws, slave jumpers, *Wordworth 7.0, D Paint5.0, Scala 300*, internet installed – £40. Also 8 meg simm – £12. Email willpower@odene.freeserve.co.uk ☎ 01762 344641

Amiga 1200 tower, Zorro board, Blizzard 1230, 32M, 6.5Gb HD, 16x CD-ROM, 4-way IDE, XL 1.76M, Midi interface, 3.1 Kick, WB, mouse, joystick, auto-switch, 12-inch Multiscan monitor, 75 CD-ROMs – £220 ono ☎ Mark 0181 509 3289

A1200, 6M memory, 170M hard drive, 2x CD-ROM, mono printer, software, including *Blitz Basic* and *BUMs*. Loads of mags, books and video – £170 ☎ 01295 263654. Email heywood18@supanet.com

A1200, 32M RAM, 250 Mb HD, 030 CPU, 68882. FPU, Squirrel interface, 2x CD-ROM, external floppy, original software and manuals, no box. Also some original boxed games, CDs, mags, etc – £250 ovno. Buyer collects or pays postage ☎ 01978 290033

Citizen 120D black and white printer. Excellent condition with manual – £25 + post ☎ 01297 552517

***ST/Amiga Format* magazines, issues 1-3 with** disks for sale or exchange. Offers to grahampersson@ukonline.co.uk

A3000 14M RAM, 800M HDD, Picasso II gfx card, 2x CD-ROM. SyQuest E2-135 +6 cartridges, Star LC/OC colour printer, KS/WB 3.1 upgrade – £400 ono ☎ 01249 654287

Commodore Amiga 500+ with one external drive, 160 games, Workbench extras, plus fonts, manuals, instructions, with some games, mouse, 3 joysticks and *Mini Office* with Manual ☎ 01922 447732 Maria

Speedball, Castles* (Italian) – £2. *Gloom 3D, *Liberation, Premier Manager Jurassic Park, Manchester United Premier League Champions, Worms, Street Fighter II, Disposable Hero, Black Crypt, Dream Web, Nick Faldo's Championship Golf, Hero Quest II, Brutal Football, Mr Nutz* – £3 each. *Theme Park* 32-colour version, *Cannon Fodder, Cannon Fodder 2, Frontier Elite II, Kings Quest Six, MicroProse F1GP, Alien Breed 3D 2, The Killing Grounds, A-Train, The Settlers* – £4 each. *Delphine Classic Collection* – £5. *Myst* – £7 nsthomas@clara.co.uk ☎ 01536 724309

Commodore MPS 1230 printer, excellent condition – £25. Colour monitor – £30, Commodore Amiga external disk drive, boxed, never used – £7 ☎ 01922 447732 Maria

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Amiga CD32 games console, plus loads of games – £60 ono. Amiga 14-inch monitor. For above CD32 – £40 ono. SW London ☎ 0181 543 0496

Amiga games: *Worms, Theme Park, Frontier Elite,* *Zool, Flashback, Midwinter II, Alien Breed, Tower Assault*. Open to offers ☎ 01302 771371

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Amiga CDs, CU Amiga CD-ROMS, full set, numbers 1 to 27 – £100 ono. *Amiga Format* CD-ROMS, numbers 1 to 41 – £150 ono. Aminet CD-ROMS, numbers 1 to 30 – £150 ono. SW London ☎ 0181 543 0496

Amiga 4000/040, 18 meg RAM, 4.3 gig hard drive, Picasso IV graphics card, GVP scsi card, SCSI CD-ROM drive, SCSI Zip drive, 2 external floppy drives, 17 inch monitor – £1,000 ono. SW London ☎ 0181 543 0496

Amiga Pro-Grab 24 – £50 ono. Amiga Vidi Amiga RT 24 – £75 ono. SW London ☎ 0181 543 0496

A4000/30 18Mb RAM, 16x CD-ROM, second disk drive, Phillips monitor, mags and games – £450ono ☎ 0116 2336960 or email BARRY@rramsey.fsnet.co.uk

WB 3.0 disks and WB 3.0 manual, original disks plus installer copy. Buyer pays postage – offers? Amiga WB 3.1 original disk set and (boxed) manuals. Buyer pays postage – offers? Barry Dymock ☎ 01582 513597

10845 monitor (good working order) – £30. 64M hard drive (A1200, internal) – £10. Also, 3.0 ROMS – £10. Will sell all for £40 ☎ Kevin 01707 881829 (Hatfield)

Amiga 1200 (with box), 60M hard drive, nine binders of *Amiga Format/Amiga Shopper*, lots of games. Some serious software. Amiga ROM kernel, manuals and instructions books – £100 ☎ 01258 450484

A500 computer – £40. A600 computer HD, manual works installed mouse – £80. Viper 630 accelerator and RAM expansion for A600 – £30. Cumana floppy external drives – £5 each. Manchester area ☎ 0161 285 1585

Amiga 1200. 18Mb RAM, CD-ROM, Phillips monitor, accelerator, extra floppy, joystick, game pad, lots of magazines with CDs, loads of software, games and utilities – £200 ☎ 01843 832612

Big box Amiga, A4000-030, extra hard drive, internal and external floppy drives, CD-ROM, tracker ball mouse, Microvitec monitor, lots of software – £1,950. 16Mb accelerator – £550 ☎ 01474 569519

CM123NE true multiscan monitor. Supports all native AGA modes, including PAL, NTSC, Productivity, HiGfx 1024x768, Super72 800x600, both DBL and Euro modes and overscan, with Amiga cable and drivers – £75 plus delivery, or you collect it from Warwick. amiga@studio.co.uk ☎ Simon on 01926 497489.

Games for sale: Combat classics – *Desert Strike*, *Shuttle* (non-A1200), *Chaos Engine 2, PGA Golf* – £5 each. Mick Galvin, 84 St Cuthbert's Crescent, Albrighton, nr Wolverhampton WV7 3HW

WANTED

Desperately seeking some old Amiga 500 titles: *Fuzzball* and *Super Putty* (system 3), *Hawkeye, Creatures, Mindroll, Venom Wing* and *Armalyte (Thalamus), Damocles, Mercenary 1-3* and *Backlash (Novagen)* ☎ Andy 01642 760930 or email arlizard@hotmail.com.

The emulator "The A64 Package" by QuesTronix, version 3.01 or later, with or w/o cable. Email amellin@hotmail.com

Scala full version. Must run on A600 HD floppies only. Needed to title videos ☎ 07714 486497 Doncaster area. Must be local-ish. Calls cost 2p at weekends fom home phone.

Please, please, please! *Gods* desperately needed! Will sell grandmother if necessary. Contact Chris Moorey on ☎ 00 30 841 41006, or by post: Akti Olountos, Elounda 72053 Greece.

***Easyscript WordPro* for Commodore 64, C64 C/W** 5.25 drive, SVHS Genlock for A1200, *Clarissa 2* original S/W or cover disk, *Distant Suns* S/W ☎ 01278 722266

Original copy of Taito's 1989 *Renegade*. Will pay. Original copy of Taito's 1989 RENEGADE. eric.park@uk.dreamcast.com

GVP A530, preferably with 4M simms, or 4M simms on their own. Apollo board with 16M minimum RAM 040 0r 060, Nov 1997 *AFCD103* to complete my set. SCSI hard drive. Barry Dymock ☎ 01582 513597

Desperately seeking some old Amiga 500 titles: *Fuzzball* and *Super Putty (System 3), Hawkeye, Creatures, Mindroll, Venom Wing,* and *Armalyte (Thalamus).* Original versions ONLY! Andy ☎ 01642 760930 or email: arlizard@hotmail.com

Can anyone help? I've lost my disc of *DSS8* by GVP. I've got manual and box but someone has relieved me of the disc ☎ Ralph 01508 488410

Amiga 4000 Tower or Desktop, any model. Can collect if in Swansea or surronding area ☎ 01792 515119. Email alex@amigax.freeserve.co.uk

Amiga contacts on the Internet. TurboPrint 6 or 7 Please email me on homer@fatboy.2sxy.com

Rombo Vidid Amiga Digitiser 24 RT pro/12 RT or pro-grab 24 RT Enzo ☎ 01527 529917 any time

Squirrel interface wanted. Email darren@crown.free-online.co.uk

Manual and software for Commodore MPS 1270A ink jet printer ☎ 01555 663992

PERSONAL

Also see the AmigaAngels document on our CD.

Power XL1760 high density half height 8 Mikronix floppies need repairs. Can anyone out there fix them? Email willpower@odene.freeserve.co.uk ☎ 01762 344641

Would the Amigan in Greece who kindly sent me a catalogue disk, please contact me, as it doesn't load and there is no address. Chris Moorey ☎ 841 41006

Leading non-print Amiga magazine, AIO, requires new writers to contribute reviews, articles or other help. For more information, email aio@aio.co.uk Anyone considered

Website, HTML and FTP help given for beginners to get you started in designing and uploading web pages. Contact webhelp@badger.org.uk or see my site at http://www.badger.org.uk/webhelp

I am an Amiga artist/musician wanting to do graphics or music for your PD, shareware or games. Highly proficient with OctaMED's *SoundStudio* and *Deluxe Paint.* Both AGA and standard Amiga formats. ☎ Vivian 001 505 835 2841 (New Mexico)

Any Amiga users new to the Internet who want some free links/galleries and downloads to get them going can go to my site at http://www.g251273.freeserve.co.uk or email me (Paul) at pol@g251273.freeserve.co.uk

Any Amiga magazines or disk magazines require another contributor? I have knowledge of A1200 and other Amigas. Will work for free. Article previously published in *Amiga Format.* ☎ Ross Whiteford 01738 850732

BBSes

The Forum! BBS online 24 hours, Kilmarnock, Scotland. Over 35 members, 2,000+ files available, including games, pictures, utilities, etc. 36K. Sysop: Jamie Maguire. Run by a software development student ☎ 01563 540863

Promised Lands BBS, online 10pm-9am 24hrs weekends. Sysop: M!k. Umlimited downloads, online CD-ROM speeds up to 33K ☎ 01562 66829 email mik@plbbs.fsnet.co.uk

Arachnoids BBS. Leicestershire Online 24hrs. ☎ 01509 551006. Friendly sysop, over 10,000 files online. No ratios, everything free. Ninja@Arachnoids.freeserve.co.uk

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Dirt Tracker BBS: the headquarters of Powernet Mail network, hubs and nodes and points available on request. Help package available. One of the UK's no.1 leading BBSs with a friendly attitude ☎ +44 (23) 8036 5112 (24 hours)

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Entertainment BBS, Wigan, online 24 hours. ☎ 01942 221375

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TABBS 2000 BBS, online 24 hours. Running Xenolink v2.8, Amiga sysop with over 15 years of Amiga experience. 20,000+ files online. File requester. Amiga support given. Hertfordshire. ☎ 01992 410215, email sysop@tmbbs.freeserve.co.uk

Total Eclipse BBS, ☎ +44 (0) 1983 522428, 24 hours. 33.6K, home of Liquid Software Design and MAX's Pro support

Elevate BBS, Hants, online 24 hours. ☎ 01329 319028

Moonlight BBS, Bedford, online 6pm-8am, 24 hours at weekends, ☎ 01234 212752. Sysop: John Marchant. Email gnome@putnoe.u-net.com.net Official Transamiga Support BBS, unlimited downloads, friendly sysop with excellent knowledge. Aminet online. Run for free by an experienced Amiga programmer

X Zone BBS, supporting the Amiga for over two years. Do you want the latest files? ☎ 01635 820590, 6pm-1am, modem callers only (33.6K)

On The Oche BBS, Waterlooville, online 24 hours. ☎ 01705 648791

USER GROUPS

Also visit the AmigaSoc website on our CD.

To members of the Northants Amiga User Group: Oops, sorry, everybody. I've lost your phone numbers etc. Please contact me again, and any people who would like to join at nsthomas@clara.co.uk also at #Gas on ARCNet Alias BobF

NAC, Nottingham Amiga Club. Users of all ages and abilities welcome. From A500 to A4000 PPCs to 68Ks. Club meetings last Saturday of each month ☎ Mark Sealey 0115 9566485 anytime

➡ **Come to #PoweredbyAmiga on ARCNET for** informative chat about Amiga's and otherwise! Visit our new URL at www.amigav.free4all.co.uk/PBA/ and be part of THE channel for Y2K!

Norwich Amiga Users Group meets fortnightly Anyone interested, please ☎ 01603 867663

Will all the people who want to help Amiga Users please contact the Amiga Free Helpline? If you need help, please do the same ☎ Terry, 01709 814296

Help needed in setting up new Amiga User Group. All ages welcome, non profit-making, not a business. Northern Ireland area ☎ 01762 331560

French speaking Amiga club. PD disks, help, buy-sell, advice. Also specialists in 8-bit emulation. Please write to: BP 120, 4000 Liege 1, Belgium. No PC!

Why not visit #amIRC on Undernet? #amIRC has established itself as the no.1 Amiga chat channel. We are the offical Amiga help channel on Undernet. Everyone is welcome http://surf.to/amirc

Amiga North Thames meet on the first Sunday of the month at St Mary Magdalene Vestry, Windmill Hill, Enfield, 1-5pm. Software/hardware problem solving, demos, news and Amiga games ☎ Mike 0956 867223 weekends or email Ant.london@ukonline.co.uk

New user group being set up called TAG (Total Amiga Group). Initially in the Somerset area ☎ Phil 01458 832981

Amiga Club International members receive a bi-monthly magazine disk and PD programs plus helpline. Recently relocated from London, Falloden Way to Dover. Established 1989 ☎ 01304 203128 or email robroy@catdtp.freeserve.co.uk

Are there any Amiga users in Birmingham who want to set up a user group? ☎ Hitesh 0121 6056452

Is there anybody in the Northamptonshire area interested in starting up a new user group? Please contact me ☎ 01536 724309 or email nsthomas@ukonline.co.uk

Great Yarmouth user group. Anyone interested in joining this user group please contact John ☎ 01493 722422

West Lancs User Group. Sundays, 1pm-4pm at St. Thomas School Hall, Highgate Rd, Upholland ☎ 01695 623865, email ralph@twiss.u-net.com. Help and advice, novices and experts welcome

NPAUG is a new Amiga user group based on the net. We offer a free monthly magazine and tech support over the web. If you are interested in joining, visit our website: http://members.aol.com:/npaug/home.html or email me: npaug@aol.com

Are there any Amiga users in Cornwall interested in starting a user group in the Helston/Falmouth area? If so, email frank@massin.freeserve.co.uk or ☎ 01326 573596 and ask for Frank

Felbrigg Amiga Group meets weekly near Cromer. We are a group for novice and expert users. For more information ☎ 01263 511705 or 824382

Amiga Support Association. We offer help, advice and a friendly chat. Monthly meetings, tutorials and a fact file are all available. To join our mailing list send a mail to Amiga_SA-Subscribe@egroups.com. Contact Phil: Snood@ukonline.co.uk ☎ 01703 464256 or ☎ Paul 01705 787367 for more information or visit http://www.btinternet.com/~philip.stephens

South West Amiga Group, (SWAG) meets every first Thursday of the month, 8:30pm at the Lamb & Flag (Harvesters), Cribbs Causeway, Bristol. SWAG intends to get Amiga users together, provide info and support, promote the Amiga and have a laugh. Contact Andy Mills Swag@wharne.u-net.com

Are you Welsh, live in Wales or love Wales? Then join Cymru Amiga User Group http://bounce.to/caug or email dark.lords@deathsdoor.com to join

Would anyone, anywhere like to join the Amiga Free Helpline? If so see AFCD46:-ReaderStuff-/Terry_Green/ or ☎ Terry 01709 814296 (Rotheram) for more details

Deal Amiga Club welcomes all old hands and newcomers alike, whatever your ability. Admission £1, under 16's 50p. Annual membership is now free. If you've bought some bits and don't know how to put them together then bring them along and let us help ☎ 01304 367992 for more information or email superhighwayman@hotmail.com

New Amiga sound and demo association seeks input, contacts and support to form a user group based around the Amiga music and demo scene. Interested? ☎ Dave 01243 864596 or 0961 985925

Power Amiga User Group based in Portsmouth for users of all ages and levels. We meet once a month on the last Saturday. We have all sorts of Amigas, prize draws, tutorials and general discussions each meeting ☎ Lee 01243 779015 (weekends only) or email LeeScott@free4all.co.uk or visit http://www.poweramiga.freeserve.co.uk

Workbench, the Manchester Amiga user group, meet on the first Thursday of each month at 7.00pm and offer general Amiga chat ☎ 0161 839 8970. Also, check out our website at: http://www.workbench.freeserve.co.uk Or email: mail@workbench.freeserve.co.uk

SEAL meets twice monthly at Northlands Park Community Centre, Basildon, Essex. Help, tutorials and presentations plus scanning, printing and email. Contact Mick Sutton, 20 Roding Way, Wickford, Essex. ☎ 01268 761429 (6-9pm) seal@thunder.u-net.com or visit our website, http://seal.amiga.tm

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Lonix

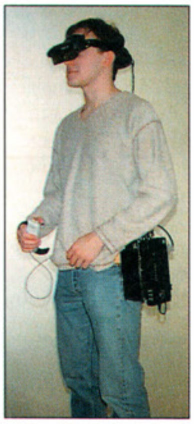


Chris Livermore goes to a Linux meeting to see what he can nick for his Amiga

No, this isn't a misprint, or a stray article from *Linux Format* that's accidentally made its way into your beloved *Amiga Format* – this month I had the pleasure of attending a Lonix meeting at City University London.

If you're thinking: "Great, but what's this got to do with the Amiga?" then just give me a minute to explain. Apart from the fact that most people who have a pro-Linux stance are by definition anti-Microsoft (so we're all on the same side anyway), there are three very good reasons why any discerning Amiga owner would have been interested in attending this Lonix meeting.

Firstly it's possible to run Linux on an Amiga, and many people do. At the moment, Lonix attracts PC-owning Linux users, but the vast majority of the topics they cover concern all Linux users, including Amiga owners. Secondly, although the Amiga usergroup scene is in a relatively healthy state right now, it never hurts to keep an eye on what the opposition are up to; Linux user groups are enjoying a surge in numbers due to the hype surrounding Linux, and this large userbase brings with it ideas that can be "borrowed" by Amiga usergroups. Thirdly, and most importantly, this particular lecture was about "wearable computers" (yes, that's right, "computers you can wear"), and as such, it was not Linux specific. In fact, most of what was discussed was relevent to any machine with a serial port!



Hi-specs equipment: Neil Newman shows off his computerised goggles – like glass ashtrays they are.



The sci-fi gear that featured in Airwolf is now becoming science-fact.

If this lecture had happened about six months ago, when Jim Collas was still around and Amiga Objects were going to take over the world, then I would have been able to rave on for page after page about how these "wearable devices" could form part of the future of the Amiga. Jim has left and Amiga Objects seems to have fallen by the wayside, at least in its initial incarnation, but if Amiga Corp can get their act together, we will probably see devices like this being used with Amiga based machines sometime in the (distant) future.

HARD-WEAR

A "wearable computer" is one that is small enough to be worn. Tonight's lecture-cum-computer fashion parade was conducted by Neil Newman from the University of Essex. Neil was wearing a fully functional wearable PC with input device and Heads-Up display, all built into his spectacles.

The interesting thing about these devices is they are both standard PC peripherals. The multi-purpose input device connects via the serial port, and the glasses can be driven from a standard VGA output. This is state of the art PC technology, but it will connect to almost any computer you care to mention, including an Amiga.

Where things become even more interesting, and where we start to see how this project concerns Linux users, and how it could be just as relevent to Amiga users, is the software used to drive these devices. Being PC-based, you'd probably expect the first choice to be Windows – but Windows isn't flexible enough. The Heads-Up display glasses can superimpose any image over the wearer's field of vision (you may remember Stringfellow Hawke in *Airwolf* – his helmet had weapons and tracking systems displays built into the visor) but Neil found that having a 15 foot square Windows desktop in front of you all the time made it difficult to move around without bumping into things. The solution, of course, is to use Linux, which can not only run in text-only mode, but which also allows you to arrange your desktop as you please – much like the Amiga does.

I could go on and on about the hardware on display at this Amilon meeting and the cool things you could do with it; this is the cutting edge of computing – years ahead of anything currently available (though most of the component pieces are available, albeit for a price). But in this emerging area of computing, the traditional concept of a desktop OS, as we know it, doesn't exist. You soon come to see how certain desktop operating systems, such as Windows, force you to work the way they want you to, whereas others, such as Linux and AmigaOS, actually empower the user to choose how they want to interact with the computer.

BACK TO THE FUTURE

This Lonix meeting reminded me of usergroup meetings in the "good old days" of computing when, if you wanted a computer, you had to build it yourself (at each meeting, someone would demonstrate their latest piece of kit, and everyone else would take notes on how to build it).

But with well over 50 people squeezing into a crowded lecture theatre, Lonix put on the best attended usergroup meeting I have ever been to. Only Linux users could have pulled off an event like this. There are many more Microsofties in the world, but most don't give a damn about their machine and just wouldn't turn up to an event like this. As for Mac users, since the introduction of the iMac, they seem to be getting more pretentious by the day. I suspect the Amiga community would have the interest, but maybe not the sheer numbers of people, and of course, there's the ever growing problem of actually being taken seriously by people outside of the community.

That leaves Linux, which is nothing special, but then it seems today that a product's success depends not on its merits, but rather on how much hype you can surround it with.

It's important for us Amiga owners to keep an eye on the Linux contingent, as I suspect Linux will, in some small way, play a part in dictating the direction that the next generation of computing devices takes. I don't believe Linux will ever offer the flexibility and efficiency of the Amiga, but it has caught the attention of the press and general public – something that Amiga hasn't done for a long time.

If Amiga owners are clever, they'll find a way to tap into this attention, and also to grab the interest of the Linux community, who at the end of the day, are simply looking for an alternative to Windows.

Chris Livermore AF

CONTACT DETAILS

The Lonix website is at:
http://www.lonix.org.uk
For more information on wearable computers, go to:
http://wearables.essex.ac.uk/

Lost Souls Form

No user group near you? Then fill in this form and send it to:
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*** You must fill in your postcode as this is what we use to calculate how far you are from other Lost Souls.**

Ben Hermans
Hyperion Software



Just the FAQs

Hyperion Software is a company that everyone will be talking about for a long time to come, so we had a chat with boss Ben Hermans

Ben Hermans (we don't have a picture of him) may be someone that few people have heard of, although the Frieden brothers (who we do have a picture of!) are already well-known for their work on *Abuse* and now *Heretic II*...

■ When did you first use an Amiga?
I got my first Amiga way back in 1985. It was an Amiga 1000 equipped with 256 K of memory. I later upgraded to an Amiga 500 and am now using a towered Amiga 4000 PPC.

■ When did you decide to get involved in the Amiga market on a business level?
I approached the development team of *Lamda* (the space-sim) in the spring of 1997 with an offer to bankroll development of a PPC/Warp3D version, as I was getting increasingly frustrated with the lack of decent software for PPC. They turned me down claiming this would mean a complete rewrite of the engine which would take too long (and several years later they even have the thing running on the PC with OpenGL). After this disappointment, I put my Amiga plans on ice.

■ How did you get the idea for licensing these games?
When Digital Images burst on the scene with their announcement of a port of *Wipeout 2097*, I contacted Stuart Walker and offered funding. It quickly became apparent that Digital Images was geared towards getting royalty based licenses with no upfront payments. I soon realised this model wasn't workable; you can't go to a company like Activision and say... "Hey guys, like the work you did on *Heretic II*, send us over the sourcecode so we can port it and we will pay you royalties for each copy sold". Big NASDAQ listed companies like Activision or Interplay won't bother with small markets like the Amiga unless they get a serious advance (say, US$50,000). As a legal consultant, I had access to this kind of money and since Jim Collas was at that time heralding the second coming of Amiga, I decided it was worth the risk. With my legal background, getting the licenses was fairly easy, all that were needed now were competent coders. I decided to contact Steffen Haeuser who subsequently put me in touch with Hans-Joerg and Thomas Frieden, Christian Sauer, Peter Annuss etc. The rest, as they say, is history.



One of Hyperion's upcoming Quake 2 based games. Guess which one?

■ What are you working on now?
After Jim Collas was forced out and the prospect of new hardware waned, we had to adopt a multi-platform strategy, meaning we would no longer acquire Amiga only licenses but would try to get Mac and/or Linux rights as well. We licensed *Shogo – Mobile Armour Division* from Monolith for Amiga, Mac and Linux. This was actually our first license agreement. We have been hard at work porting Monolith's LithTech engine. Subsequent games using the same engine are on the horizon. Monolith recently signed breakthrough license deals for LithTech V2 with companies as 3DO, Interplay and Fox Interactive. We are confident that most, if not all, of these games will make it to the Amiga. Licensing *Heretic 2* from Activision, which uses the *Quake 2* engine, was another strategic decision as it allowed us to familiarise ourselves with the widely used *Quake 2* engine. We have already licensed *Sin* and more *Quake 2* engine-based games are to follow. Then there's *Worms: Armageddon* and *Descent Freespace* which have both been delayed, pending the development of the other titles and because of a lack of funding due to the meltdown of the Collas plan. More titles will be announced soon as we have established contact with another major player in the entertainment software industry. We now have an extensive codebase and are confident that future conversions will proceed far more rapidly.

■ What's the one Amiga peripheral that you wouldn't be without?
The Symbios UW SCSI controller on my PPC card in combination with my Atlas IV UW SCSI HD drive. It gives real life transfers of around 11M/s with almost no CPU overhead. You can just forget about IDE.

■ Who's your Amiga hero and why?
My Amiga heroes are the Hyperion coding team. Some of the best and brightest people the Amiga community has to offer. Outside Hyperion, it would have to be Sam Jordan. He has already brought us WarpOS, Warp3D, StormMesa (OpenGL) and the 68K emulator and now he is playing a pivotal role in porting the Amiga OS to PPC. Without him, Hyperion would not exist.

afb amiga format bulletin

Alex Furmanski extols the virtues of the Internet in general and the afb in particular, which is just what we wanted...

Every issue the afb page will be written by a different member of afb. Fancy a go?

When I first got a modem, the Internet scared me; it was a seemingly endless source of information and entertainment. There were so many sites to see I could never get through them all.

Thank heavens for mailing lists!

It can seem a bit scary at first. There'll be conversations flying about like a bee on speed and you won't have a clue as to what's going on. As I see it, there are three basic options. The first of these is the "lurker" approach.

LURKERS AND OTHERS

This involves you sitting around watching the threads transmute, hopefully into something you'll know about. When such an event occurs, it's time to share your pearls of wisdom and, who knows, perhaps somebody'll reply and a conversation will start. Congratulations, you've just made your first email chum.

Option two is the "regular face" method. Regular Faces on afb include Sandy Brownlee, Neil Bullock and Kevin Fairhurst (to pick just a few names out of my inbox). This type of peep reply to a broad range of topics, both sharing their pearls and asking questions.

Finally (and logically) comes Option three. This is the "all-out gung-ho guns-a-blazing look-at-me-I'm-a-crazy-madman (or the list owner so don't mess with me)" approach. These guys'll (or even gals, yes there are some feminine Amiga owners out there) reply to anything and often account for a large portion of your inbox.

It's thanks to recommendations, asides and comments from people on mailing lists that I managed to keep my Internet phone bill down (though Screaming.net have probably played a larger factor, but I'm talking about before I switched). Now when I want some Amiga news, I only visit sites I know will give me the information I want in the format I like, and it's mostly down to the great chaps and chapesses on afb.

afb is *Amiga Format*'s open mailing list, a discussion forum for Amiga owners to talk about their Amigas, problems they may be having and the latest events in the wildly meandering river that is Amiga. Advice is often dished out from familiars such as Messrs Vost, Drummond and Bothwick, and there's long been a suspicion that Amiga (that's the company) have staff on this list (though if that's not the case, then if anybody asks, I had nothing to do with perpetuating that rumour).

Thanks to the great way the list is organised, it is not only a place where you can ask questions but you can also search the archives of previous messages at the eGroups site to see if somebody has had similar troubles to you.

DATABASES

eGroups also provide other handy features such as databases (where you can find out the meanings of smilies, acronyms and abbreviations or find out when products were reviewed by *AF*), an archive of links to Amiga-related sites and the oh-so-useful polls so you can probe other members.

Of course we do get non-Amiga topics being covered – we'd probably get bored of talking nothing but Amiga day in day out. Often somebody will make comparisons between Amigas and another platform and the thread will spiral off and we'll end up talking exclusively about that platform.

We'll congratulate you on your wife giving birth if you tell us, we'll wish you happy birthday if you enter the date in the calendar on the eGroups site, and we'll even help you locate the origin of a film quote – though, technically, that would be the job of afb-movie.

AFB MOVIES

"afb-movie?" I hear you cry. Indeed. Once there was a time when off-topic chit-chat was rife, but now thanks to two sister lists (afb-movie and afb-ot – the latter even spawning its own sister list) afb is mostly Amiga only, thanks to intelligent members' common sense and the strong arm of the law (Hello, Ben).

So in short, afb is a great place to make friends, solve any problems you may have (Dr Matt's Startup-Sequence Surgery is open regularly), find out the latest news and gossip, and generally have lots of fun with other Amiga users.

Subscribe today! You won't regret it (and neither will your phone company – this Internet lark is damn addictive).

Alex Furmanski

AFB TOP TIP

"To hide a drive from the OS, go to HDTOOLBOX and set the FILESYSTEM type to be CUSTOM 0x0. When you SAVE the changes to the drive, you get a warning message stating that the partition will be destroyed. Ignore the message; nothing is destroyed. As no filesystem 0x0 exists, the Amiga will not be able to see it, but as it is still mounted, FUSION will. It hides the drive icon as well."

Chris Dallimore

RULES AND REGS:

Based on the fact that people complain about a lack of regulation on the list, we've decided to introduce some hard and fast rules. Expect these to change as time goes by, although some will stay fixed:

- **All polls must have dates. For an example of this, look at existing polls before starting one of your own. Also, unless absolutely necessary, choose a closed or anonymous poll – the named one takes up far too much space.**
- **Make sure you quote sensibly, don't include the greeting or signature from the previous mail, etc.**
- **Please pay attention to and keep all mails with MANAGE at the start of the subject line.**
- **Keep the subject live. Make sure that it applies to the mail you are sending, or change it to something more appropriate.**
- **There are no content restrictions on afb, although swearing is frowned upon, but please don't include attachments unless previously agreed.**
- **Any URLs posted should have the "http://" part to enable people to simply double-click on them to launch their browsers.**

GETTING ON AFB:

You can subscribe to the afb by going to the following website and signing up:
http://www.egroups.com/group/afb/

If you just want news on when the next issue of *Amiga Format* will be out, we offer that at:
http://www.egroups.com/group/afb-announce/

It's worth joining both lists since they each offer unique things and the announce list usually only has one email every four weeks.

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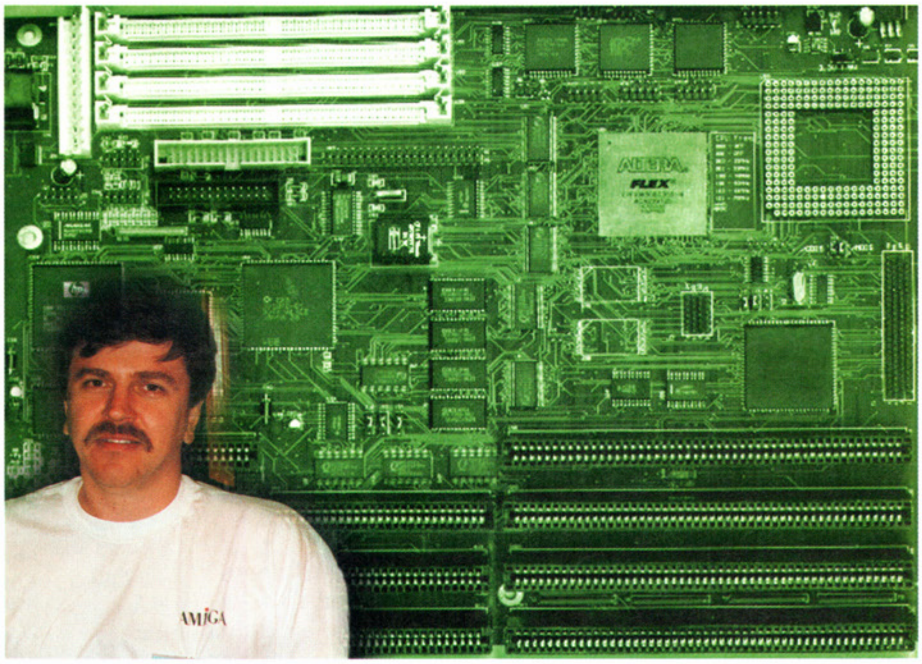
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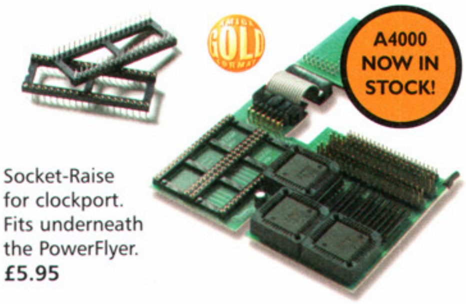
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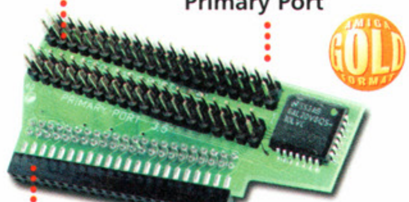
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A1200 desktop universal keyboard int.	£24.95
A1200 tower universal keyboard int.	£24.95
Original A4000 keyboard only*	£39.95
Original PC keyboard only*	£14.95

*requires keyboard interface



amiga 1200 magic pack

Amiga Magic Pack	£169.95
Heavy Duty PSU A500/600/1200	£59.95

power tower accessories

PCMCIA "V" adaptor	£19.95
External audio port	£14.95
"Y" cable to mix CD audio to the Amiga audio	£9.95
Power SCSI adaptor, internal to external SCSI adaptor (external DB-25 pin female connector, internal 50 pin header, internal DB-25 pin male connector	£19.95
SCSI II converter from (PPC) 50 pin high density to 25 D male, inc. extension cable to the int/ext SCSI adaptor	£29.95
SCSI converter - 50 pin female Centronic to 50 pin header (for internal connection of SCSI device to Squirrel or similar interfaces)	£9.95
50 pin male Centronic lead	£14.95
Zip adaptor - 50 pin female Centronic to DB-25 pin male (for direct connection of Squirrel to Zip drives or similar devices)	£14.95

epson colour printers

Epson Stylus 460 Inkjet	£99.95
Epson Stylus Colour 660	£119.95
Epson Stylus Colour 760	£189.95
Epson Stylus Photo 750	£199.95
Printer Cable	£9.95

All Epson printers require a printer cable.
Epson printers require Turbo Print 7.10.

colour scanners

Epson GT7000 SCSI scanner*	£199.95
Mustek SP 6000 SCSI scanner*	£79.95
Scan Quick 4 - scanning software for Epson	£49.95
Scan Quick 4 - scanning software for Mustek	£49.95

SCSI scanners require a SCSI interface.

new typhoon accelerator cards

Typhoon Lite 2 68030 40MHz upto 64MB RAM	£59.95
Typhoon SCSI Mk2 - full 68030 40MHz, includes SCSI controller, suitable for all tower systems	£89.95
SCSI Adaptor for MK1 and 2 Typhoon	£19.95
Viper MK2 68030 40MHz upto 32MB RAM	£49.95

memory modules and fpu's

For accelerator and expansion boards

4MB SIMM	£14.95
8MB SIMM	£19.95
16MB SIMM	£29.95
32MB SIMM	£49.95
32MB SIMM (slim for Blizzard 1260 boards)	£79.95
64MB SIMM (Typhoon and all Blizzards)	£139.95
128MB SIMM (Typhoon and all Blizzards)	£199.95
1MB ZIP RAM static column for A3000	£16.95
GVP custom 4MB RAM module	£49.95
GVP custom 16MB RAM module	£99.95
20MHz PLCC FPU	£10.00
33MHz PLCC FPU	£15.00
40MHz PGA FPU	£20.00
50MHz PGA FPU	£29.95

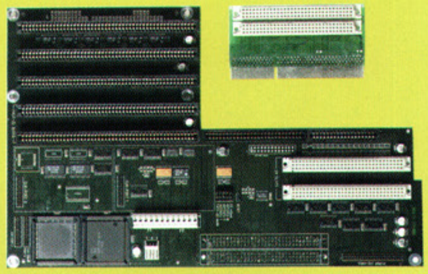
amiga 500 accelerator card

Viper 520CD, 68020EC 33MHz, 8MB of Fast RAM on board and 3.0 Kickstart ROM including full 3.0 Workbench disk set. £99.95

memory expansion upgrades

Please call for details of our memory upgrades for all Amiga computers.

New Z4 and bundles!

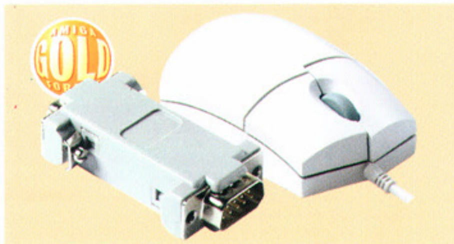


the new A1200 tower Z4 board

Z4 the ultimate bus board for Zorro II boards: Five Zorro II slots • One video slot aligned with the first Zorro slot for all major graphics cards • Option Video slot enabler for users of card with scan doubler or flick fixer • Four A1200 style clock ports • Connector for reset cable • Jumpers to activate double speed transfers on the first two slots • Floppy drive power lead connector for CVPPC users • Two extra fast Z4 slots for future ultra fast cards • Pass through and compatibility jumpers for all major accelerator cards.

The Z4 board (for A1200 Power Tower)	£99.95
Video Slot Enabler	£24.95
Z4 inc. Apollo 68040 28MHz accelerator	£179.95
Z4 inc. Blizzard 1240 40MHz accelerator	£239.95
Twister Mk2 Fast Serial Interface	£29.95
Silver Surfer Fast Serial Interface	£24.95

hot new products.....



punchinello mouse adaptor

This PC mouse and trackball adaptor works with the Microsoft two-button, Logitech three-button compatible serial mice and trackballs. Punchinello takes care of the conversion.

Punchinello PC Mouse Adaptor only	£14.95
Punchinello and Wheel Mouse	£24.95
Wheel enable for Punchinello inc. s/w	£4.95
Standard PC Wheel Mouse	£14.95
Logitech Pilot Wheel Mouse	£29.95
Logitech Marble Trackball	£29.95

Logitech requires Punchinello

monitors - 3 year warranty

15" monitor	£125.95
17" monitor (.26 pitch)	£199.95
17" monitor (.28 pitch)	£179.95

miscellenous products

Amiga 400DPI Mouse & Mat	£9.95
Mouse & Boing Mouse Mat	£9.95
Boing Mouse Mat only	£4.95
CD32 Joypad	£9.95
New 4 way joystick adaptor	£8.95
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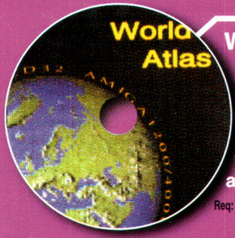
mind benders
Rack your head around this. Dozens of Brain Teasers, Puzzle games, and Mind tinkery type of games.
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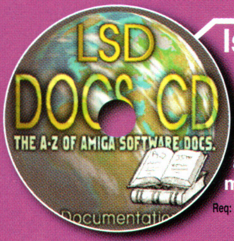


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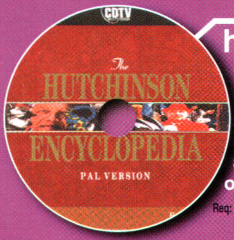
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The latest amiga emulation software for the PC. Now supports AGA. CD supplied with guide and around 20 games.
Min: P166, 16mb ram, Win'95 / 98



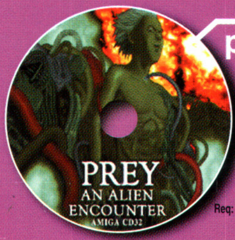
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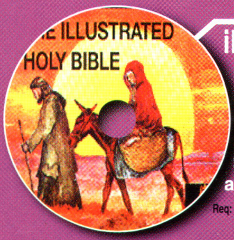
huchinson's
The Hutchinson's concise encyclopedia features hundreds of photo's and many thousands of articles.
Req: AGA, 2mb ram + CD-ROM or CD32



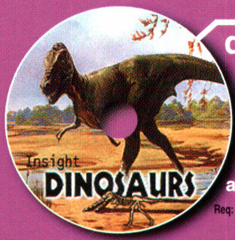
prey: alien
Prey : An Alien Encounter is a 3D adventure with elements of suprise, strategy and action.
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Req: AGA, 4mb ram + HD & CD-ROM



zombie massacre
A blood fest of zombies unleashed on the earth. Basically go round and shoot lots of zombies in this Doom sort of game.
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amiga classix
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